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Nelson H. F. Beebe  
University of Utah  
Department of Mathematics, 110 LCB  
155 S 1400 E RM 233  
Salt Lake City, UT 84112-0090  
USA

Tel: +1 801 581 5254  
FAX: +1 801 581 4148

E-mail: [beebe@math.utah.edu](mailto:beebe@math.utah.edu), [beebe@acm.org](mailto:beebe@acm.org),  
[beebe@computer.org](mailto:beebe@computer.org) (Internet)  
WWW URL: <http://www.math.utah.edu/~beebe/>

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## References

**Smith:1980:FLB**

- [1] A. C. Smith. Formation of lethal blood clots in fishes. *Journal of Fish Biology*, 16(1):1–4, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Delahunty:1980:SRO**

- [2] G. Delahunty and V. L. de Vlaming. Seasonal relationships of ovary weight, liver weight and fat stores with body weight in the goldfish, *Carassius auratus* (L.). *Journal of Fish Biology*, 16(1):5–13, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Demaël:1980:RTT**

- [3] A. Demaël, D. Garin, and G. Peres. Response of the tench (*Tinca tinca* L.) to potassium nitrate enriched water. *Journal of Fish Biology*, 16(1):15–22, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ingram:1980:SIN**

- [4] G. A. Ingram. Substances involved in the natural resistance of fish to infection—a review. *Journal of Fish Biology*, 16(1):23–60, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bolis:1980:IBV**

- [5] L. Bolis and J. C. Rankin. Interactions between vascular actions of detergent and catecholamines in perfused gills of European eel, *Anguilla anguilla* L. and brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 16(1):61–73, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ortega-Salas:1980:SCC**

- [6] A. A. Ortega-Salas. Seasonal changes in the common dab, *Limanda limanda* (L.) in Isle of Man waters. *Journal of Fish Biology*, 16(1):75–82, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dahlgren:1980:ETD**

- [7] B. T. Dahlgren. The effects of three different dietary protein levels on the fecundity in the guppy, *Poecilia reticulata* (Peters). *Journal of Fish Biology*, 16(1):83–97, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fahy:1980:ECM**

- [8] Edward Fahy. *Eubothrium crassum* in migratory trout, *Salmo trutta* L., in the sea. *Journal of Fish Biology*, 16(1):99–104, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Malmqvist:1980:SMB**

- [9] B. Malmqvist. The spawning migration of the brook lamprey, *Lampetra planeri* Bloch, in a South Swedish stream. *Journal of Fish Biology*, 16(1):105–114, January 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alexander:1980:CFM**

- [10] J. B. Alexander and G. A. Ingram. A comparison of five of the methods commonly used to measure protein concentrations in fish sera. *Journal of Fish Biology*, 16(2):115–122, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Linfield:1980:ECL**

- [11] R. S. J. Linfield. Ecological changes in a lake fishery and their effects on a stunted roach *Rutilus rutilus* population. *Journal of Fish Biology*, 16(2):123–144, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tareen:1980:ABA**

- [12] I. U. Tareen. Abscessed bony areas on *Acanthopagrus cuvieri* (Day) as a substrate for epiphytic algae. *Journal of Fish Biology*, 16(2):145–148, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berrebi:1980:ESF**

- [13] P. Berrebi and J. Britton-Davidian. Enzymatic survey of four populations of *Atherina boyeri* based on electrophoresis and the occurrence of a microsporidiosis. *Journal of Fish Biology*, 16(2):149–157, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clarke:1980:SHM**

- [14] A. J. Clarke and D. M. Witcomb. A study of the histology and morphology of the digestive tract of the common eel (*Anguilla anguilla*). *Journal of Fish Biology*, 16(2):159–170, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kilambi:1980:EAS**

- [15] R. V. Kilambi and A. Zdinak. The effects of acclimation on the salinity tolerance of grass carp, *Ctenopharyngodon idella* (Cuv. and Vala.). *Journal of Fish Biology*, 16(2):171–175, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barham:1980:EBI**

- [16] W. T. Barham, G. L. Smit, and H. J. Schoonbee. The effect of bacterial infection on erythrocyte fragility and sedimentation rate of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 16(2):177–180, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ingram:1980:IRB**

- [17] G. A. Ingram and J. B. Alexander. The immune response of the brown trout *Salmo trutta* to lipopolysaccharide. *Journal of Fish Biology*, 16(2):181–197, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robb:1980:FFG**

- [18] A. P. Robb and J. R. G. Hislop. The food of five gadoid species during the pelagic O-group phase in the northern North Sea. *Journal of Fish Biology*, 16(2):199–217, February 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lindsay:1980:CAD**

- [19] G. J. H. Lindsay and J. E. Harris. Carboxymethylcellulase activity in the digestive tracts of fish. *Journal of Fish Biology*, 16(3):219–233, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grove:1980: CBD**

- [20] D. J. Grove and C. Crawford. Correlation between digestion rate and feeding frequency in the stomachless teleost, *Blennius pholis* L. *Journal of Fish Biology*, 16(3):235–247, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davenport:1980:OUD**

- [21] J. Davenport and S. Lönning. Oxygen uptake in developing eggs and larvae of the cod, *Gadus morhua* L. *Journal of Fish Biology*, 16(3):249–256, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**OGrady:1980:FAE**

- [22] K. T. O’Grady and P. C. R. Hughes. Factorial analysis of an experimental comparison of three methods of fishing for rainbow trout, *Salmo gairdneri* Richardson, in still water. *Journal of Fish Biology*, 16(3):257–264, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1980:SHR**

- [23] D. B. C. Scott and C. E. Currie. Social hierarchy in relation to adrenocortical activity in *Xiphophorus helleri* Heckel. *Journal of Fish Biology*, 16(3):265–277, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Frost:1980:GCS**

- [24] W. E. Frost and C. Kipling. The growth of charr, *Salvelinus willughbii* Günther, in Windermere. *Journal of Fish Biology*, 16(3):279–289, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bjerknes:1980:MCP**

- [25] V. Bjerknes and A. B. Vaag. Migration and capture of pink salmon, *Oncorhynchus gorbusha* Walbaum in Finnmark, North Norway. *Journal of Fish Biology*, 16(3):291–297, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Slinde:1980:SNZ**

- [26] E. Slinde and H. Kryvi. Studies on the nature of the Z-discs in skeletal muscle fibres of sharks, *Etmopterus spinax* L. and *Galeus melastomus* Rafinesque–Schmaltz. *Journal of Fish Biology*, 16(3):299–308, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Proctor:1980:HUS**

- [27] C. Proctor, P. R. L. Mosse, and R. C. L. Hudson. A histochemical and ultrastructural study of the development of the propulsive musculature of the brown trout, *Salmo trutta* L., in relation to its swimming behaviour. *Journal of Fish Biology*, 16(3):309–329, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Mattey:1980:SEM**

- [28] D. L. Mattey, M. Morgan, and D. E. Wright. A scanning electron microscope study of the pseudobranchs of two marine teleosts. *Journal of Fish Biology*, 16(3):331–343, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRa**

- [29] Anonymous. Book reviews. *Journal of Fish Biology*, 16(3):345–348, March 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Narasimhamurti:1980:MMS**

- [30] C. Narasimhamurti, C. Kalavati, and B. Saratchandra. *Myxosoma microspora* n. sp. (Myxosporidia: Protozoa) parasitic in the gills of *Mugil cephalus* L. *Journal of Fish Biology*, 16(4):345–348, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milne:1980:SRB**

- [31] R. S. Milne and J. F. Leatherland. Studies on the relationship between osmotic or ionic regulation and thyroid gland activity in two salmonid fishes, *Salmo gairdneri* Richardson and *Oncorhynchus kisutch* Walbaum. *Journal of Fish Biology*, 16(4):349–360, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dadzie:1980:RCF**

- [32] S. Dadzie. Recent changes in the fishery of a new tropical man-made lake, Lake Kamburu (Kenya). *Journal of Fish Biology*, 16(4):361–367, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hulata:1980:GDB**

- [33] G. Hulata, R. Moav, and G. Wohlfarth. Genetic differences between the Chinese and the European races of the common carp III. Gonad abnormalities in hybrids. *Journal of Fish Biology*, 16(4):369–370, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yaron:1980:ETP**

- [34] Z. Yaron, M. Cocos, and H. Salzer. Effects of temperature and photoperiod on ovarian recrudescence in the cyprinid fish *Mirogrex terraesanctae*. *Journal of Fish Biology*, 16(4):371–382, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alexander:1980:HCA**

- [35] N. Alexander, R. M. Laurs, A. McIntosh, and S. W. Russell. Haematological characteristics of albacore, *Thunnus alalunga* (Bonnaterre), and skipjack, *Katsuwonus pelamis* (Linnaeus). *Journal of Fish Biology*, 16(4):383–395, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Touart:1980:ARS**

- [36] L. W. Touart and S. A. Bortone. The accessory reproductive structure in the simultaneous hermaphrodite *Diplectrum bivittatum*. *Journal of Fish Biology*, 16(4):397–403, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lane:1980:RHS**

- [37] H. C. Lane. The response of the haemoglobin system of fed and starved rainbow trout, *Salmo gairdneri* Richardson, to bleeding. *Journal of Fish Biology*, 16(4):405–411, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rossi:1980:BAE**

- [38] Remigio Rossi and Paolo Villani. A biological analysis of eel catches, *Anguilla anguilla* L., from the lagoons of Lesina and Varano, Italy. *Journal of Fish Biology*, 16(4):413–423, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weihs:1980:HSF**

- [39] D. Weihs. Hydrodynamics of suction feeding of fish in motion. *Journal of Fish Biology*, 16(4):425–433, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gervai:1980:OAR**

- [40] J. Gervai, T. Mariaan, Z. Krasnai, A. Nagy, and V. Csányui. Occurrence of aneuploidy in radiation gynogenesis of carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 16(4):435–439, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Giles:1980:SSU**

- [41] N. Giles. A stomach sampler for use on live fish. *Journal of Fish Biology*, 16(4):441–444, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McCleave:1980:SPE**

- [42] J. D. McCleave. Swimming performance of European eel (*Anguilla anguilla* (L.)) elvers. *Journal of Fish Biology*, 16(4):445–452, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Seagrave:1980:UHL**

- [43] C. P. Seagrave, D. Bucke, and D. J. Alderman. Ultrastructure of a haplosporean-like organism: the possible causative agent of proliferative kidney disease in rainbow trout. *Journal of Fish Biology*, 16(4):453–459, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1980:SGB**

- [44] G. M. Hughes and A. K. Mittal. Structure of the gills of *Barbus sophor* (Ham), a cyprinid with tertiary lamellae. *Journal of Fish Biology*, 16(4):461–467, April 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crivelli:1980:ELW**

- [45] A. Crivelli. The eye lens weight and age in the common carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 16(5):469–473, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoffmann:1980:SAV**

- [46] R. Hoffmann, P. Wondrak, and W. Groth. Seasonal anatomical variations in the testes of European pike, *Esox lucius* L. *Journal of Fish Biology*, 16(5):475–482, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skorping:1980:PBN**

- [47] A. Skorping. Population biology of the nematode *Camallanus lacustris* in perch, *Perca fluviatilis* L., from an oligotrophic lake in Norway. *Journal of Fish Biology*, 16(5):483–492, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dawson:1980:QSC**

- [48] A. S. Dawson and A. S. Grimm. Quantitative seasonal changes in the protein, lipid and energy content of the carcass, ovaries and liver of adult female plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 16(5):493–504, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chan:1980:RGG**

- [49] E. H. Chan and T. E. Chua. Reproduction in the greenback grey mullet, *Liza subviridis* (Valenciennes, 1836). *Journal of Fish Biology*, 16(5):505–519, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dudley:1980:CEG**

- [50] R. G. Dudley and R. J. Scully. Changes in experimental gillnet catches from the Kafue Floodplain, Zambia, since construction of the Kafue Gorge Dam. *Journal of Fish Biology*, 16(5):521–537, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1980:SCT**

- [51] J. F. Leatherland and R. A. Sonstegard. Seasonal changes in thyroid hyperplasia, serum thyroid hormone and lipid concentrations, and pituitary gland structure in Lake Ontario Coho salmon, *Oncorhynchus kisutch* Walbaum and a comparison with Coho salmon from Lakes Michigan and Erie. *Journal of Fish Biology*, 16(5):539–562, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alvarez-Leon:1980:SLA**

- [52] R. Alvarez-León. A specimen of *Lutjanus argentiventris* (Peters) lacking pelvic fins. *Journal of Fish Biology*, 16(5):563–564, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Egglishaw:1980:SGS**

- [53] H. J. Egglishaw and P. E. Shackley. Survival and growth of salmon, *Salmo salar* (L.), planted in a Scottish stream. *Journal of Fish Biology*, 16(5):565–584, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Muller:1980:FTS**

- [54] R. Müller. Fish toxicity and surface tension of non-ionic surfactants: investigations of antifoam agents. *Journal of Fish Biology*, 16(5):585–589, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tooby:1980:TGC**

- [55] T. E. Tooby, J. Lucey, and B. Stott. The tolerance of grass carp, *Ctenopharyngodon idella* Val., to aquatic herbicides. *Journal of Fish Biology*, 16(5):591–597, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRb**

- [56] Anonymous. Book reviews. *Journal of Fish Biology*, 16(5):599–602, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:FMA**

- [57] Anonymous. Future meetings and announcements. *Journal of Fish Biology*, 16(5):602, May 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deGroot:1980:CMG**

- [58] S. J. de Groot. The consequences of marine gravel extraction on the spawning of herring, *Clupea harengus* Linné. *Journal of Fish Biology*, 16(6):605–611, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Maceina:1980:ISO**

- [59] M. J. Maceina, F. G. Nordlie, and J. V. Shireman. The influence of salinity on oxygen consumption and plasma electrolytes in grass carp, *Ctenopharyngodon idella* Val. *Journal of Fish Biology*, 16(6):613–619, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Radabaugh:1980:CMP**

- [60] D. C. Radabaugh. Changes in minnow, *Pimephales promelas* Rafinesque, schooling behaviour associated with infections of brain-encysted larvae of the fluke, *Ornithodiplostomum Ptychocheilus*. *Journal of Fish Biology*, 16(6):621–628, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1980:EFM**

- [61] M. Jobling and P. Spencer Davies. Effects of feeding on metabolic rate, and the Specific Dynamic Action in plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 16(6):629–638, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nash:1980:LOB**

- [62] R. D. M. Nash. Laboratory observations on the burrowing of the snake blenny, *Lumpenus lampretaeformis* (Walbaum), in soft sediment. *Journal of Fish Biology*, 16(6):639–648, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crawford:1980:SPS**

- [63] R. J. M. Crawford. Seasonal patterns in South Africa's Western Cape purseseine fishery. *Journal of Fish Biology*, 16(6):649–664, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stott:1980:NSC**

- [64] F. C. Stott. A note on the spaciousness of the cavity around the brain of the basking shark, *Cetorhinus maximus* (Gunner). *Journal of Fish Biology*, 16(6):665–667, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1980:SDI**

- [65] A. D. Pickering and P. Christie. Sexual differences in the incidence and severity of ectoparasitic infestation of the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 16(6):669–683, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Niimi:1980:MEG**

- [66] A. J. Niimi and S. L. Morgan. Morphometric examination of the gills of walleye, *Stizostedion vitreum vitreum* (Mitchill) and rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 16(6):685–692, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Frietsche:1980:HCR**

- [67] R. A. Frietsche and C. F. Bailey. The histology and calcification of regenerating scales in the blackspotted topminnow, *Fundulus olivaceus* (Storer). *Journal of Fish Biology*, 16(6):693–700, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mackie:1980:CNF**

- [68] A. M. Mackie, J. W. Adron, and P. T. Grant. Chemical nature of feeding stimulants for the juvenile Dover sole, *Solea solea* (L.). *Journal of Fish Biology*, 16(6):701–708, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Conway:1980:FLB**

- [69] D. V. P. Conway. The food of larval blue whiting, *Micromesistius poutasou* (Risso), in the Rockall area. *Journal of Fish Biology*, 16(6):709–723, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Duncan:1980:BCF**

- [70] K. W. Duncan. On the back-calculation of fish lengths; modifications and extensions to the Fraser–Lee equation. *Journal of Fish Biology*, 16(6):725–730, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRc**

- [71] Anonymous. Book reviews. *Journal of Fish Biology*, 16(6):731–732, June 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Valtonen:1980:MSI**

- [72] E. T. Valtonen. Metechinorhynchus salmonis infection and diet in the river-spawning whitefish of the Bothnian Bay. *Journal of Fish Biology*, 17(1):1–8, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Meade:1980:SHP**

- [73] T. L. Meade and S. J. Perrone. Selective haematological parameters in steelhead trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 17(1):9–12, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorpe:1980:TDG**

- [74] J. E. Thorpe, R. I. G. Morgan, E. M. Ottaway, and M. S. Miles. Time of divergence of growth groups between potential 1+ and 2+ smolts among sibling Atlantic salmon. *Journal of Fish Biology*, 17(1):13–21, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lowe-Jinde:1980:ORT**

- [75] L. Lowe-Jinde. Observations of rainbow trout, *Salmo gairdneri* Richardson, infected with *Cryptobia salmostica*. *Journal of Fish Biology*, 17(1):23–30, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gillerman:1980:CSM**

- [76] R. G. Gillerman. Characterization of swimming muscle in the Atlantic mackerel, *Scomber scombrus* L. *Journal of Fish Biology*, 17(1):31–41, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whitear:1980:ELF**

- [77] M. Whitear, A. K. Mittal, and E. B. Lane. Endothelial layers in fish skin. *Journal of Fish Biology*, 17(1):43–65, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnsen:1980:UCC**

- [78] P. B. Johnsen and A. D. Hasler. The use of chemical cues in the upstream migration of Coho salmon, *Oncorhynchus kisutch* Walbaum. *Journal of Fish Biology*, 17(1):67–73, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lane:1980:CPP**

- [79] H. C. Lane and T. P. Tharp. Changes in the population of polyribosomal containing red cells of peripheral blood of rainbow trout, *Salmo gairdneri* Richardson, following starvation and bleeding. *Journal of Fish Biology*, 17(1):75–81, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1980:NDC**

- [80] D. B. C. Scott and S. E. Rennie. Nuclear diameter as a criterion of adrenocortical activity in a teleost fish *Coregonus lavaretus* (L.). *Journal of Fish Biology*, 17(1):83–90, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bregazzi:1980:BPE**

- [81] P. R. Bregazzi and C. R. Kennedy. The biology of pike, *Esox lucius* L., in a southern eutrophic lake. *Journal of Fish Biology*, 17(1):91–112, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnston:1980:TAC**

- [82] I. A. Johnston and B. Maitland. Temperature acclimation in crucian carp, *Carassius carassius* L., morphometric analyses of muscle fibre ultrastructure. *Journal of Fish Biology*, 17(1):113–125, July 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lewis:1980:SBL**

- [83] D. B. Lewis. Studies of the biology of the lesser weever fish, *Trachinus vipera* Cuvier II. Distribution: II. Distribution. *Journal of Fish Biology*, 17(2):127–133, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Agrawal:1980:CTA**

- [84] N. K. Agrawal and C. L. Mahajan. Comparative tissue ascorbic acid studies in fishes. *Journal of Fish Biology*, 17(2):135–141, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaber:1980:FAD**

- [85] S. J. M. Blaber and T. G. Blaber. Factors affecting the distribution of juvenile estuarine and inshore fish. *Journal of Fish Biology*, 17(2):143–162, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mann:1980:GRS**

- [86] R. H. K. Mann. The growth and reproductive strategy of the gudgeon, *Gobio gobio* (L.), in two hard-water rivers in southern England. *Journal of Fish Biology*, 17(2):163–176, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Walters:1980:ESB**

- [87] G. R. Walters and J. A. Plumb. Environmental stress and bacterial infection in channel catfish, *Ictalurus punctatus* Rafinesque. *Journal of Fish Biology*, 17(2):177–185, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1980:GEPa**

- [88] M. Jobling. Gastric evacuation in plaice, *Pleuronectes platessa* L.: effects of dietary energy level and food composition. *Journal of Fish Biology*, 17(2):187–196, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jones:1980:CBR**

- [89] G. P. Jones. Contribution to the biology of the redbanded perch, *Ellerkerdia huntii* (Hector), with a discussion on hermaphroditism. *Journal of Fish Biology*, 17(2):197–207, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Broughton:1980:ETL**

- [90] N. M. Broughton, G. Goldspink, and N. V. Jones. The effect of training on the lateral musculature of O-group roach, *Rutilus rutilus* (L.), and their fatigue in subsequent exercise tests. *Journal of Fish Biology*, 17(2):209–217, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnstone:1980:DDA**

- [91] A. D. F. Johnstone. The detection of dissolved amino acids by the Atlantic cod, *Gadus morhua* L. *Journal of Fish Biology*, 17(2):219–230, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Plinchuk:1980:LLS**

- [92] V. I. Plinchuk. The lateral-line system of *Caspiosoma caspium* (Kessler, 1877) and the systematic status of *Asra turcomanus* Iljin, 1941. *Journal of Fish Biology*, 17(2):231–235, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRd**

- [93] Anonymous. Book reviews. *Journal of Fish Biology*, 17(2):237–242, August 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dadzie:1980:RBL**

- [94] S. Dadzie and B. C. C. Wangila. Reproductive biology, length-weight relationship and relative condition of pond raised *Tilapia zilli* (Gervais). *Journal of Fish Biology*, 17(3):243–253, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Watson:1980:MPP**

- [95] R. A. Watson and T. A. Dick. Metazoan parasites of pike, *Esox lucius* Linnaeus, from Southern Indian Lake, Manitoba, Canada. *Journal of Fish Biology*, 17(3):255–261, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pauly:1980:PDN**

- [96] D. Pauly and P. Martosubroto. The population dynamics of *Nemipterus marginatus* (Cuvier & Val.) off Western Kalimantan, South China Sea. *Journal of Fish Biology*, 17(3):263–273, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barham:1980:HAB**

- [97] W. T. Barham, G. L. Smit, and H. J. Schoonbee. The haematological assessment of bacterial infection in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 17(3):275–281, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lubbock:1980:SFA**

- [98] R. Lubbock. The shore fishes of Ascension Island. *Journal of Fish Biology*, 17(3):283–303, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**VanBanning:1980:OBS**

- [99] P. Van Banning. The occurrence of black spots in the tongue sole, *Cynoglossus browni* Chabanaud, due to nematode eggs (*Capillaria spinosa*) previously described in the shark *Carcharhinus milberti* Müller & Henle. *Journal of Fish Biology*, 17(3):305–309, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goven:1980:PCC**

- [100] B. A. Goven, D. L. Dawe, and J. B. Gratzek. Protection of channel catfish, *Ictalurus punctatus* Rafinesque, against *Ichthyophthirius multifiliis* Fouquet by immunization. *Journal of Fish Biology*, 17(3):311–316, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Healy:1980:BGA**

- [101] J. A. Healy and M. F. Mulcahy. A biochemical genetic analysis of populations of the northern pike, *Esox lucius* L., from Europe and North America. *Journal of Fish Biology*, 17(3):317–324, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1980:ESP**

- [102] M. Jobling. Effects of starvation on proximate chemical composition and energy utilization of plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 17(3):325–334, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRe**

- [103] Anonymous. Book reviews. *Journal of Fish Biology*, 17(3):335–336, September 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smit:1980:HAG**

- [104] G. L. Smit and J. Hattingh. Haematological assessment of generally used freshwater fish blood anticoagulants. *Journal of Fish Biology*, 17(4):337–341, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laird:1980:LOT**

- [105] L. M. Laird, A. R. Wilson, and F. G. T. Holliday. Lesions observed in the testis of precociously maturing male Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 17(4):343–348, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Madhavi:1980:CPF**

- [106] R. Madhavi. Comparison of the parasitic fauna of *Aplocheilus panchax* and *A. melastigma*. *Journal of Fish Biology*, 17(4):349–358, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lonning:1980:SEL**

- [107] S. Lønning and J. Davenport. The swelling egg of the long rough dab, *Hippoglossoides platessoides limandoides* (Bloch). *Journal of Fish Biology*, 17(4):359–378, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vlele:1980:ATI**

- [108] D. Vlele, T. H. Kerstetter, and J. Sullivan. Adoptive transfer of immunity against *Vibrio anguillarum* in rainbow trout, *Salmo gairdneri* Richardson, vaccinated by the immersion method. *Journal of Fish Biology*, 17(4):379–386, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wootton:1980:EAR**

- [109] R. J. Wootton, J. R. M. Allen, and S. J. Cole. Energetics of the annual reproductive cycle in female sticklebacks, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 17(4):387–394, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Flowerdew:1980:EBJ**

- [110] M. W. Flowerdew and D. J. Grove. An energy budget for juvenile thick-lipped mullet, *Crenimugil labrosus* (Risso). *Journal of Fish Biology*, 17(4):395–410, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1980:SCA**

- [111] E. J. Hyslop. Stomach contents analysis — a review of methods and their application. *Journal of Fish Biology*, 17(4):411–429, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hlavek:1980:EMG**

- [112] R. R. Hlavek and R. V. Bulkley. Effects of malachite green on leucocyte abundance in rainbow trout, *Salmo gairdneri* (Richardson). *Journal of Fish Biology*, 17(4):431–444, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1980:ACA**

- [113] A. C. Smith and F. Ramos. Automated chemical analysis in fish health assessment. *Journal of Fish Biology*, 17(4):445–450, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorpe:1980:GRS**

- [114] J. E. Thorpe and R. I. G. Morgan. Growth-rate and smolting-rate of progeny of male Atlantic salmon parr, *Salmo salar* L. *Journal of Fish Biology*, 17(4):451–460, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morrow:1980:IPB**

- [115] W. J. W. Morrow and A. Pulsford. Identification of peripheral blood leucocytes of the dogfish (*Scyliorhinus canicula* L.) by electron microscopy. *Journal of Fish Biology*, 17(4):461–475, October 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yoakim:1980:HHU**

- [116] E. G. Yoakim and J. M. Grizzle. Histological, histochemical and ultrastructural studies on the interrenal and chromaffin cells of the fathead minnow, *Pimephales promelas* Rafinesque. *Journal of Fish Biology*, 17(5):477–494, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1980:BRS**

- [117] A. P. Scott, V. J. Bye, S. M. Baynes, and J. R. C. Springate. Book review: *Seasonal variations in plasma concentrations of 11-ketotestosterone and testosterone in male rainbow trout, Salmo gairdnerii Richardson*. *Journal of Fish Biology*, 17(5):495–505, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lee:1980:SRP**

- [118] R. M. Lee and S. D. Gerking. Survival and reproductive performance of the desert pupfish, *Cyprinodon n. nevadensis* (Eigenmann and Eigenmann), in acid waters. *Journal of Fish Biology*, 17(5):507–515, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wells:1980:CSE**

- [119] R. M. G. Wells, M. D. Ashby, S. J. Duncan, and J. A. Macdonald. Comparative study of the erythrocytes and haemoglobins in nototheniid fishes from Antarctica. *Journal of Fish Biology*, 17(5):517–527, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezeasor:1980:SEM**

- [120] Daniel N. Ezeasor and W. M. Stokoe. Scanning electron microscopic study of the gut mucosa of the rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 17(5):529–539, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fahy:1980:GSF**

- [121] Edward Fahy. ‘growing season’ as a factor in sea trout production. *Journal of Fish Biology*, 17(5):541–546, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1980:GEPb**

- [122] M. Jobling. Gastric evacuation in plaice, *Pleuronectes platessa* L.: effects of temperature and fish size. *Journal of Fish Biology*, 17(5):547–551, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1980:NSD**

- [123] N. R. Merrett. A new species of the deep-sea fish genus *Coelorinchus* *giorna* (Macrouridae) from the eastern North Atlantic, with notes on its ecology. *Journal of Fish Biology*, 17(5):553–564, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gibson:1980:BSA**

- [124] R. N. Gibson and I. A. Ezzi. The biology of the scaldfish, *Arnoglossus laterna* (Walbaum) on the west coast of Scotland. *Journal of Fish Biology*, 17(5):565–575, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1980:PCA**

- [125] G. J. A. Kennedy and C. D. Strange. Population changes after two years of salmon (*Salmo salar* L.) stocking in upland trout (*Salmo trutta* L.) streams. *Journal of Fish Biology*, 17(5):577–586, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1980:SVS**

- [126] A. P. Scott, V. J. Bye, and S. M. Baynes. Seasonal variations in sex steroids of female rainbow trout (*Salmo gairdneri* Richardson). *Journal of Fish Biology*, 17(5):587–592, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stott:1980:HSM**

- [127] G. G. Stott, N. H. McArthur, R. Tarpley, R. F. Sis, and V. Jacobs. Histopathological survey of male gonads offish from petroleum production and control sites in the Gulf of Mexico. *Journal of Fish Biology*, 17(5):593–602, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1980:RBM**

- [128] A. H. Weatherley, H. S. Gill, and S. C. Rogers. The relationship between mosaic muscle fibres and size in rainbow trout (*Salmo gairdneri*). *Journal of Fish Biology*, 17(5):603–610, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRf**

- [129] Anonymous. Book reviews. *Journal of Fish Biology*, 17(5):611–612, November 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kilambi:1980:FCG**

- [130] Raj V. Kilambi. Food consumption, growth and survival of grass carp *Ctenopharyngodon idella* Val. at four salinities. *Journal of Fish Biology*, 17(6):613–618, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezeasor:1980:CLE**

- [131] D. N. Ezeasor and W. M. Stokoe. A cytochemical, light and electron microscopic study of the eosinophilic granule cells in the gut of the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 17(6):619–634, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sarker:1980:FHM**

- [132] A. L. Sarker, N. K. Al-Daham, and M. N. Bhatti. Food habits of the mudskipper, *Pseudapocryptes dentatus* (Val.). *Journal of Fish Biology*, 17(6):635–639, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mahajan:1980:ACS**

- [133] C. L. Mahajan and J. M. S. Dheer. An autoradiographic and cytochemical study of erythropoiesis in a fresh water fish, *Channa punctatus* Bloch. *Journal of Fish Biology*, 17(6):641–648, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beggs:1980:SPC**

- [134] G. L. Beggs, G. F. Holeyton, and E. J. Grossman. Some physiological consequences of angling stress in muskellunge, *Esox masquinongy* Mitchill. *Journal of Fish Biology*, 17(6):649–659, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kratt:1980:ASB**

- [135] L. F. Kratt and R. J. F. Smith. An analysis of the spawning behaviour of the Arctic grayling *Thymallus arcticus* (Pallas) with observations on mating success. *Journal of Fish Biology*, 17(6):661–666, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gervai:1980:ITC**

- [136] J. Gervai, S. Páter, A. Nagy, L. Horváth, and V. Csényi. Induced triploidy in carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 17(6):667–671, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Murphy:1980:EMC**

- [137] T. M. Murphy. The effect of methallibure and cyproterone acetate on the gonadotrophic cells, plasma androgen levels and testes of precocious 1+ male Atlantic salmon parr *Salmo salar* L. *Journal of Fish Biology*, 17(6):673–680, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1980:ESG**

- [138] A. W. H. Turnpenny and R. Williams. Effects of sedimentation on the gravels of an industrial river system. *Journal of Fish Biology*, 17(6):681–693, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wootton:1980:EBW**

- [139] R. J. Wootton, J. R. M. Allen, and S. J. Cole. Effect of body weight and temperature on the maximum daily food consumption of *Gasterosteus aculeatus* L. and *Phoxinus phoxinus* (L.): selecting an appropriate



model. *Journal of Fish Biology*, 17(6):695–705, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1980:RBH**

- [140] A. P. Scott and S. M. Baynes. A review of the biology, handling and storage of salmonid spermatozoa. *Journal of Fish Biology*, 17(6):707–739, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jensen:1980:GIN**

- [141] Arne Johan Jensen. The ‘Gut index’, a new parameter to measure the gross nutritional state of Arctic char, *Salvelinus alpinus* (L.) and brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 17(6):741–747, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1980:BRg**

- [142] Anonymous. Book reviews. *Journal of Fish Biology*, 17(6):749–750, December 1980. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kazakov:1981:PSP**

- [143] R. V. Kazakov. Peculiarities of sperm production by anadromous and parr Atlantic salmon (*Salmo salar* L.) and fish cultural characteristics of such sperm. *Journal of Fish Biology*, 18(1):1–8, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bowers:1981:HII**

- [144] A. Bowers and J. B. Alexander. Hyperosmotic infiltration: immunological demonstration of infiltrating bacteria in brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 18(1):9–13, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coles:1981:DPP**

- [145] T. F. Coles. The distribution of perch, *Perca fluviatilis* L. throughout their first year of life in Llyn Tegid, North Wales. *Journal of Fish Biology*, 18(1):15–30, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1981:EVC**

- [146] D. J. A. Brown. The effects of various cations on the survival of brown trout, *Salmo trutta* at low pHs. *Journal of Fish Biology*, 18(1):31–40, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agius:1981:ESS**

- [147] C. Agius. The effects of splenectomy and subsequent starvation on the storage of haemosiderin by the melano-macrophages of rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 18(1):41–44, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shelton:1981:DRG**

- [148] W. L. Shelton, R. O. Smitherman, and G. L. Jensen. Density related growth of grass carp, *Ctenopharyngodon idella* (Val.) in managed small impoundments in Alabama. *Journal of Fish Biology*, 18(1):45–51, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1981:FRN**

- [149] N. R. Merrett. First record of a notacanth leptocephalus; a benthopelagic capture in the slope waters off Ireland. *Journal of Fish Biology*, 18(1):53–57, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stuart-Kregor:1981:IGS**

- [150] P. A. C. Stuart-Kregor, J. P. Sumpter, and J. M. Dodd. The involvement of gonadotrophin and sex steroids in the control of reproduction in the parr and adults of Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 18(1):59–72, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Carrick:1981:OCF**

- [151] T. R. Carrick. Oxygen consumption in the fry of brown trout (*Salmo trutta* L.) related to pH of the water. *Journal of Fish Biology*, 18(1):73–80, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leknes:1981:UAM**

- [152] I. L. Leknes. The ultrastructure of the atrial myocardial cell in three teleostean species. *Journal of Fish Biology*, 18(1):81–85, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:SET**

- [153] M. Jobling. Some effects of temperature, feeding and body weight on nitrogenous excretion in young plaice *Pleuronectes platessa* L. *Journal*

of *Fish Biology*, 18(1):87–96, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nordlie:1981:FRB**

- [154] F. G. Nordlie. Feeding and reproductive biology of eleotrid fishes in a tropical estuary. *Journal of Fish Biology*, 18(1):97–110, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRa**

- [155] Anonymous. Book reviews. *Journal of Fish Biology*, 18(1):111–116, January 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Broughton:1981:HDL**

- [156] N. M. Broughton, G. Goldspink, and N. V. Jones. Histological differences in the lateral musculature of O-group roach, *Rutilus rutilus* (L.) from different habitats. *Journal of Fish Biology*, 18(2):117–122, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ferreira:1981:EAB**

- [157] J. T. Ferreira, G. L. Smit, and H. J. Schoonbee. The effect of the anaesthetic benzocaine hydrochloride on red cell fragilities in *Cyprinus carpio*. *Journal of Fish Biology*, 18(2):123–126, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cassani:1981:FBU**

- [158] J. R. Cassani. Feeding behaviour of underyearling hybrids of the grass carp, *Ctenopharyngodon idella* [female sign] and the bighead, *Hypophthalmichthys nobilis* [male sign] on selected species of aquatic plants. *Journal of Fish Biology*, 18(2):127–133, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lubbock:1981:FSP**

- [159] R. Lubbock and A. Edwards. The fishes of Saint Paul's rocks. *Journal of Fish Biology*, 18(2):135–157, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baranes:1981:ESD**

- [160] A. Baranes and J. Wendling. The early stages of development in *Carcharhinus plumbeus*. *Journal of Fish Biology*, 18(2):159–175, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1981:CMU**

- [161] P. C. Blaxhall. A comparison of methods used for the separation of fish lymphocytes. *Journal of Fish Biology*, 18(2):177–181, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robb:1981:OFD**

- [162] A. P. Robb. Observations on the food and diel feeding behaviour of pelagic O-group gadoids in the northern North Sea. *Journal of Fish Biology*, 18(2):183–194, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1981:RGF**

- [163] A. H. Weatherley and H. S. Gill. Recovery growth following periods of restricted rations and starvation in rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 18(2):195–208, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McArdle:1981:IPS**

- [164] H. J. McArdle and I. A. Johnston. Isolation and properties of sarcoplasmic reticulum from the fast muscles of plaice *Pleuronectes platessa* L. *Journal of Fish Biology*, 18(2):209–221, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Totland:1981:VLM**

- [165] G. K. Totland, H. Kryvi, Q. Bone, and P. R. Flood. Vascularization of the lateral muscle of some elasmobranchiomorph fishes. *Journal of Fish Biology*, 18(2):223–234, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRb**

- [166] Anonymous. Book reviews. *Journal of Fish Biology*, 18(2):235–236, February 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bulow:1981:SVR**

- [167] F. J. Bulow, M. E. Zeman, J. R. Winningham, and W. F. Hudson. Seasonal variations in RNA–DNA ratios and in indicators of feeding, reproduction, energy storage, and condition in a population of bluegill, *Lepomis macrochirus* Rafinesque. *Journal of Fish Biology*, 18(3):237–244, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gwyther:1981:GEL**

- [168] D. Gwyther and D. J. Grove. Gastric emptying in *Limanda limanda* (L.) and the return of appetite. *Journal of Fish Biology*, 18(3):245–259, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stott:1981:HSO**

- [169] G. G. Stott, N. H. McArthur, R. Tarpley, V. Jacobs, and R. F. Sis. Histopathologic survey of ovaries of fish from petroleum production and control sites in the Gulf of Mexico. *Journal of Fish Biology*, 18(3):261–269, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crivelli:1981:BCC**

- [170] A. J. Crivelli. The biology of the common carp, *Cyprinus carpio* L. in the Camargue, southern France. *Journal of Fish Biology*, 18(3):271–290, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ferreira:1981:HEA**

- [171] J. T. Ferreira, G. L. Smit, and H. J. Schoonbee. Haematological evaluation of the anaesthetic benzocaine hydrochloride in the freshwater fish *Cyprinus carpio* L. *Journal of Fish Biology*, 18(3):291–297, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Hakim:1981:DAG**

- [172] A. W. H. Al-Hakim, M. I. A. Al-Mehdi, and A. H. J. Al-Salman. Determination of age, growth and sexual maturity of *Barbus grypus* in the Dukan reservoir of Iraq. *Journal of Fish Biology*, 18(3):299–308, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Swift:1981:HBS**

- [173] D. J. Swift. A holding box system for physiological experiments on rainbow trout (*Salmo gairdneri* Richardson) requiring rapid blood sampling. *Journal of Fish Biology*, 18(3):309–319, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cadwallader:1981:FGH**

- [174] P. L. Cadwallader and A. K. Eden. Food and growth of hatchery-produced Chinook salmon, *Oncorhynchus tshawytscha* (Walbaum), in landlocked Lake Purrumbete, Victoria, Australia. *Journal of Fish Biology*, 18(3):321–330, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kryvi:1981:MCR**

- [175] H. Kryvi, T. Flatmark, T. Flatmark, and G. K. Totland. The myoglobin content in red, intermediate and white fibres of the swimming muscle in three species of shark—a comparative study using high-performance liquid chromatography. *Journal of Fish Biology*, 18(3):331–338, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dick:1981:PAC**

- [176] T. A. Dick and M. Belosevic. Parasites of Arctic charr *Salvelinus alpinus* (Linnaeus) and their use in separating sea-run and non-migrating charr. *Journal of Fish Biology*, 18(3):339–347, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shackley:1981:VTM**

- [177] S. E. Shackley, P. E. King, and S. M. Gordon. Vitellogenesis and trace metals in a marine teleost. *Journal of Fish Biology*, 18(3):349–352, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lone:1981:EFA**

- [178] K. P. Lone and A. J. Matty. The effect of feeding androgenic hormones on the proteolytic activity of the alimentary canal of carp *Cyprinus carpio* L. *Journal of Fish Biology*, 18(3):353–358, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Treasurer:1981:SAR**

- [179] J. W. Treasurer and F. G. T. Holliday. Some aspects of the reproductive biology of perch *Perca fluviatilis* L. A histological description of the reproductive cycle. *Journal of Fish Biology*, 18(3):359–376, March 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shirvell:1981:VFR**

- [180] C. S. Shirvell. Validity of fin-ray ageing for brown trout. *Journal of Fish Biology*, 18(4):377–383, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:IFMa**

- [181] M. Jobling. The influences of feeding on the metabolic rate of fishes: a short review. *Journal of Fish Biology*, 18(4):385–400, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skorping:1981:SDA**

- [182] A. Skorping. Seasonal dynamics in abundance, development and pattern of infection of *Bunodera luciopercae* (Müller) in perch, *Perca fluviatilis* L. from an oligotrophic lake in Norway. *Journal of Fish Biology*, 18(4):401–410, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agrawal:1981:EAA**

- [183] N. K. Agrawal and C. L. Mahajan. Effect of ascorbic acid deficiency on the uptake of iodine by thyroid and non-thyroid tissues of an air-breathing freshwater fish *Channa punctatus* Bloch. *Journal of Fish Biology*, 18(4):411–416, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1981:BSS**

- [184] A. W. H. Turnpenny, R. N. Bamber, and P. A. Henderson. Biology of the sand-smelt (*Atherina presbyter* Valenciennes) around Fawley Power Station. *Journal of Fish Biology*, 18(4):417–427, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cresswell:1981:PSM**

- [185] R. C. Cresswell. Post-stocking movements and recapture of hatchery-reared trout released into flowing waters — a review. *Journal of Fish Biology*, 18(4):429–442, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hastings:1981:GMS**

- [186] P. A. Hastings. Gonad morphology and sex succession in the protogynous hermaphrodite *Hemanthias vivanus* (Jordan and Swain). *Journal of Fish Biology*, 18(4):443–454, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pieterse:1981:OBC**

- [187] J. J. Pieterse, G. L. Smit, K. Van Vliet, H. J. Schoonbee, and J. Hattingh. Observations on the blood of the Chinese silver carp *Hypophthalmichthys molitrix* (Valenciennes). *Journal of Fish Biology*, 18(4):455–459, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matthiessen:1981:HCF**

- [188] P. Matthiessen. Haematological changes in fish following aerial spraying with endosulfan insecticide for testse fly control in Botswana. *Journal*

of *Fish Biology*, 18(4):461–469, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blake:1981:ADS**

- [189] C. Blake and B. F. Blake. Age determination in six species of fish from a Mexican Pacific coastal lagoon. *Journal of Fish Biology*, 18(4):471–478, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ross:1981:UBS**

- [190] L. G. Ross, W. Watts, and A. H. Young. An ultrasonic biotelemetry system for the continuous monitoring of tail-beat rate from free-swimming fish. *Journal of Fish Biology*, 18(4):479–490, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Takvorian:1981:OGS**

- [191] P. M. Takvorian and A. Cali. The occurrence of *Glugea stephani* (Hagenmuller, 1899) in American winter flounder, *Pseudopleuronectes americanus* (Walbaum) from the New York–New Jersey lower bay complex. *Journal of Fish Biology*, 18(4):491–501, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRc**

- [192] Anonymous. Book reviews. *Journal of Fish Biology*, 18(4):503–504, April 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hickman:1981:DSD**

- [193] R. A. Hickman. Densities and swimbladder development of juvenile American eels, *Anguilla rostrata* (Lesueur) as related to energetics of migration. *Journal of Fish Biology*, 18(5):507–517, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tomasso:1981:PCD**

- [194] J. R. Tomasso, K. B. Davis, and N. C. Parker. Plasma corticosteroid dynamics in channel catfish, *Ictalurus punctatus* (Rafinesque), during and after oxygen depletion. *Journal of Fish Biology*, 18(5):519–526, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezeasor:1981:LEM**

- [195] D. N. Ezeasor and W. M. Stokoe. Light and electron microscopic studies on the absorptive cells of the intestine, caeca and rectum of the adult



rainbow trout, *Salmo gairdneri*, rich. *Journal of Fish Biology*, 18(5):527–544, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Douglas:1981:RMD**

- [196] W. A. Douglas and W. J. R. Lanzing. The respiratory mechanisms of the dusky flathead, *Platycephalus fuscus* (Platycephalidae, Scorpaeniformes). *Journal of Fish Biology*, 18(5):545–552, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chapman:1981:ULF**

- [197] G. B. Chapman. Ultrastructure of the liver of the fingerling rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 18(5):553–567, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kleckner:1981:CSR**

- [198] R. C. Kleckner and W. H. Krueger. Changes in swimbladder retial morphology in *Anguilla rostrata* during premigration metamorphosis. *Journal of Fish Biology*, 18(5):569–577, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dixon:1981:AIC**

- [199] D. G. Dixon and J. B. Sprague. Acclimation-induced changes in toxicity of arsenic and cyanide to rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 18(5):579–589, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1981:HEP**

- [200] A. L. Scott and W. A. Rogers. Haematological effects of prolonged sublethal hypoxia on channel catfish *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 18(5):591–601, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Menasveta:1981:LTM**

- [201] P. Menasveta. Lethal temperature of marine fishes of the Gulf of Thailand. *Journal of Fish Biology*, 18(5):603–607, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Benda:1981:CBT**

- [202] R. S. Benda. A comparison of bottom trawl catch rates in the Kenya waters of Lake Victoria. *Journal of Fish Biology*, 18(5):609–613, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:IFMb**

- [203] M. Jobling. The influences of feeding on the metabolic rate of fishes: a short review [note added in proof]. *Journal of Fish Biology*, 18(5):615, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRd**

- [204] Anonymous. Books received. *Journal of Fish Biology*, 18(5):617–618, May 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Douglas:1981:CCV**

- [205] W. A. Douglas and W. J. R. Lanzing. Colour change and visual cues in the sand flathead, *Platycephalus arenarius* (Ramsay and Ogilby). *Journal of Fish Biology*, 18(6):619–628, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ferguson:1981:AER**

- [206] A. Ferguson and F. M. Mason. Allozyme evidence for reproductively isolated sympatric populations of brown trout *Salmo trutta* L. in Lough Melvin, Ireland. *Journal of Fish Biology*, 18(6):629–642, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1981:TFP**

- [207] J. F. Leatherland and R. A. Sonstegard. Thyroid function, pituitary structure and serum lipids in Great Lakes Coho salmon, *Oncorhynchus kisutch* Walbaum, ‘jacks’ compared with sexually immature spring salmon. *Journal of Fish Biology*, 18(6):643–653, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hayasaka:1981:FCA**

- [208] S. S. Hayasaka and J. Sullivan. Furunculosis in cultured American eel *Anguilla rostrata* (Le Sueur). *Journal of Fish Biology*, 18(6):655–659, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lane:1981:CNT**

- [209] H. C. Lane, A. E. Rolfe, and J. R. Nelson. Changes in the nucleotide triphosphate/haemoglobin and nucleotide triphosphate/red cell ratios of rainbow trout, *Salmo gairdneri* Richardson, subjected to prolonged starvation and bleeding. *Journal of Fish Biology*, 18(6):661–668, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gibson:1981:CAP**

- [210] R. N. Gibson and I. H. Hesthagen. A comparison of the activity patterns of the sand goby *Pomatoschistus minutus* (Pallas) from areas of different tidal range. *Journal of Fish Biology*, 18(6):669–684, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnston:1981:OBG**

- [211] B. R. Johnston and D. W. Halton. Occurrence of *Bucephaloides gracilescens metacercariae* in three species of gadoid fish. *Journal of Fish Biology*, 18(6):685–691, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leong:1981:CMP**

- [212] T. S. Leong and J. C. Holmest. Communities of metazoan parasites in open water fishes of Cold Lake, Alberta. *Journal of Fish Biology*, 18(6):693–713, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Penney:1981:STT**

- [213] R. K. Penney and G. Goldspink. Short term temperature acclimation in myofibrillar ATPase of a stenotherm *Salmo gairdneri* Richardson and an eurytherm *Carassius auratus*. *Journal of Fish Biology*, 18(6):715–721, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roales:1981:EGI**

- [214] R. R. Roales. The effect of growth inhibiting factors on the total lipid content of the zebrafish, *Brachydanio rerio* (Hamilton-Buchanan). *Journal of Fish Biology*, 18(6):723–728, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Treasure:1981:SAR**

- [215] J. W. Treasure. Some aspects of the reproductive biology of perch *Perca fluviatilis* L. Fecundity, maturation and spawning behaviour. *Journal of Fish Biology*, 18(6):729–740, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Northcote:1981:JCR**

- [216] T. G. Northcote. Juvenile current response, growth and maturity of above and below waterfall stocks of rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 18(6):741–751, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roper:1981:SNF**

- [217] D. S. Roper. Superficial neuromasts of the flatfish *Peltorhamphus novaezeelandiae* (Günther). *Journal of Fish Biology*, 18(6):753–758, June 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Silva:1981:ABG**

- [218] E. I. L. Silva and S. S. De Silva. Aspects of the biology of grey mullet, *Mugil cephalus* L., adult populations of a coastal lagoon in Sri Lanka. *Journal of Fish Biology*, 19(1):1–10, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barber:1981:BCA**

- [219] D. L. Barber, J. E. Mills Westermann, and M. G. White. The blood cells of the Antarctic icefish *Chaenocephalus aceratus* Lönnberg: light and electron microscopic observations. *Journal of Fish Biology*, 19(1):11–28, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:DDI**

- [220] M. Jobling. Dietary digestibility and the influence of food components on gastric evacuation in plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 19(1):29–36, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zelnik:1981:EEP**

- [221] P. R. Zelnik and G. Goldspink. The effect of exercise on plasma cortisol and blood sugar levels in the rainbow trout, *Salmo gairdnerii* Richardson. *Journal of Fish Biology*, 19(1):37–43, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Swift:1981:CSB**

- [222] D. J. Swift. Changes in selected blood component concentrations of rainbow trout, *Salmo gairdneri* Richardson, exposed to hypoxia or sublethal concentrations of phenol or ammonia. *Journal of Fish Biology*, 19(1):45–61, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Godin:1981:EHD**

- [223] J.-G. J. Godin. Effect of hunger on the daily pattern of feeding rates in juvenile pink salmon, *Oncorhynchus gorbuscha* Walbaum. *Journal of Fish Biology*, 19(1):63–71, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fernholm:1981:NSH**

- [224] B. Fernholm. A new species of hagfish of the genus *Myxine*, with notes on other eastern Atlantic myxinids. *Journal of Fish Biology*, 19(1):73–82, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gosting:1981:ABC**

- [225] L. Gosting, D. M. Mirando, and R. W. Gould. Antigen-binding cells in the peripheral blood of sockeye salmon, *Oncorhynchus nerka* Walbaum, induced by immersion or intraperitoneal injection of *Vibrio anguillarum* bacterin. *Journal of Fish Biology*, 19(1):83–86, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anthony:1981:VCT**

- [226] P. D. Anthony. Visual contrast thresholds in the cod *Gadus morhua* L. *Journal of Fish Biology*, 19(1):87–103, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1981:ESH**

- [227] C. R. Kennedy and R. J. Burrough. The establishment and subsequent history of a population of *Ligula intestinalis* in roach *Rutilus rutilus* (L.). *Journal of Fish Biology*, 19(1):105–126, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRe**

- [228] Anonymous. Book review. *Journal of Fish Biology*, 19(1):127, July 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mills:1981:ADL**

- [229] C. A. Mills. The attachment of dace, *Leuciscus leuciscus* L., eggs to the spawning substratum and the influence of changes in water current on their survival. *Journal of Fish Biology*, 19(2):129–134, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ottaway:1981:PIV**

- [230] E. M. Ottaway and A. Clarke. A preliminary investigation into the vulnerability of young trout (*Salmo trutta* L.) and Atlantic salmon (*S. salar* L.) to downstream displacement by high water velocities. *Journal of Fish Biology*, 19(2):135–145, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smit:1981:PRB**

- [231] G. L. Smit, J. Hattingh, and J. T. Ferreira. The physiological responses of blood during thermal adaptation in three freshwater fish species. *Journal of Fish Biology*, 19(2):147–160, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agius:1981:ESM**

- [232] C. Agius and R. J. Roberts. Effects of starvation on the melano-macrophage centres of fish. *Journal of Fish Biology*, 19(2):161–169, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1981:OEF**

- [233] C. R. Kennedy. The occurrence of *Eubothrium fragile* (Cestoda: Pseudophyllidae) in twaite shad, *Alosa fallax* (Lacépède) in the River Severn. *Journal of Fish Biology*, 19(2):171–177, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lee:1981:ESE**

- [234] Cheng-Sheng Lee and Bruno Menu. Effects of salinity on egg development and hatching in grey mullet *Mugil cephalus* L. *Journal of Fish Biology*, 19(2):179–188, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morse:1981:RSF**

- [235] W. W. Morse. Reproduction of the summer flounder, *Paralichthys dentatus* (L.). *Journal of Fish Biology*, 19(2):189–203, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1981:ESC**

- [236] D. J. A. Brown and S. Lynam. The effect of sodium and calcium concentrations on the hatching of eggs and the survival of the yolk sac fry of brown trout, *Salmo trutta* L. at low pH. *Journal of Fish Biology*, 19(2):205–211, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1981:EGP**

- [237] M. A. K. Smith. Estimation of growth potential by measurement of tissue protein synthetic rates in feeding and fasting rainbow trout, *Salmo gairdnerii* Richardson. *Journal of Fish Biology*, 19(2):213–220, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1981:LTS**

- [238] C. R. Kennedy. Long term studies on the population biology of two species of eyefluke, *Diplostomum gasterostei* and *Tylodelphys clavata* (Digenea: Diplostomatidae), concurrently infecting the eyes of perch, *Perca fluviatilis*. *Journal of Fish Biology*, 19(2):221–236, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1981:PDC**

- [239] A. D. Woodhead. Penetration and distribution of carbon particles in a teleost fish, *Poecilia formosa* (Girard), the Amazon molly. *Journal of Fish Biology*, 19(2):237–242, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRf**

- [240] Anonymous. Book reviews. *Journal of Fish Biology*, 19(2):243–244, August 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:MMG**

- [241] M. Jobling. Mathematical models of gastric emptying and the estimation of daily rates of food consumption for fish. *Journal of Fish Biology*, 19(3):245–257, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baynes:1981:RTS**

- [242] S. M. Baynes, A. P. Scott, and A. P. Dawson. Rainbow trout, *Salmo gairdnerii* Richardson, spermatozoa: effects of cations and pH on motility. *Journal of Fish Biology*, 19(3):259–267, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lanzing:1981:FSC**

- [243] W. J. R. Lanzing and R. G. Wright. The fine structure of the chromatophores and other non-sensory components of the eye of the blue-eye, *Pseudomugil signifer*. *Journal of Fish Biology*, 19(3):269–284, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Carey:1981:DPR**

- [244] W. E. Carey and D. L. G. Noakes. Development of photobehavioural responses in young rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 19(3):285–296, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**ONeill:1981:HIR**

- [245] J. G. O'Neill. The humoral immune response of *Salmo trutta* L. and *Cyprinus carpio* L. exposed to heavy metals. *Journal of Fish Biology*, 19(3):297–306, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Collins:1981:FPS**

- [246] M. R. Collins. The feeding periodicity of striped mullet, *Mugil cephalus* L., in two Florida habitats. *Journal of Fish Biology*, 19(3):307–315, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davenport:1981:OSC**

- [247] J. Davenport, S. Lønning, and E. Kjørsvik. Osmotic and structural changes during early development of eggs and larvae of the cod, *Gadus morhua* L. *Journal of Fish Biology*, 19(3):317–331, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ross:1981:REE**

- [248] B. Ross and K. Jauncey. A radiographic estimation of the effect of temperature on gastric emptying time in *Sarotherodon niloticus* (L) × *S. aureus* (Steindachner) hybrids. *Journal of Fish Biology*, 19(3):333–344, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezenwa:1981:AGD**

- [249] B. I. O. Ezenwa and K. Ikusemiju. Age and growth determinations in the catfish, *Chrysichthys nigrodigitatus* (Lacépède) by use of the dorsal spine. *Journal of Fish Biology*, 19(3):345–351, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kazakov:1981:ESA**

- [250] R. V. Kazakov. The effect of the size of Atlantic salmon, *Salmo salar* L., eggs on embryos and alevins. *Journal of Fish Biology*, 19(3):353–360, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRg**

- [251] Anonymous. Book reviews. *Journal of Fish Biology*, 19(3):361–363, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Anonymous:1981:FMA**

- [252] Anonymous. Future meetings and announcements. *Journal of Fish Biology*, 19(3):363, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:E**

- [253] Anonymous. Erratum. *Journal of Fish Biology*, 19(3):364, September 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lobel:1981:TBH**

- [254] P. S. Lobel. Trophic biology of herbivorous reef fishes: alimentary pH and digestive capabilities. *Journal of Fish Biology*, 19(4):365–397, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Muller:1981:CBT**

- [255] R. G. Muller and R. S. Benda. Comparison of bottom trawl stock densities in the inner Kavirondo Gulf of Lake Victoria. *Journal of Fish Biology*, 19(4):399–401, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Botham:1981:HLO**

- [256] Jane W. Botham and Margaret J. Manning. The histogenesis of the lymphoid organs in the carp *Cyprinus carpio* L. and the ontogenetic development of allograft reactivity. *Journal of Fish Biology*, 19(4):403–414, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lincoln:1981:SMT**

- [257] R. F. Lincoln. Sexual maturation in triploid male plaice (*Pleuronectes platessa*) and plaice  $\times$  flounder (*Platichthys flesus*) hybrids. *Journal of Fish Biology*, 19(4):415–426, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munshi:1981:GFS**

- [258] J. S. D. Munshi and G. M. Hughes. Gross and fine structure of the pseudo branch of the climbing perch, *Anabas testudineus* (Bloch). *Journal of Fish Biology*, 19(4):427–438, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1981:TTF**

- [259] M. Jobling. Temperature tolerance and the final preferendum — rapid methods for the assessment of optimum growth temperatures. *Journal*

of *Fish Biology*, 19(4):439–455, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kilambi:1981:CED**

- [260] R. V. Kilambi and A. Zdinak. Comparison of early developmental stages and adults of grass carp, *Ctenopharyngodon idella*, and hybrid carp (female grass carp  $\times$  male bighead *Aristichthys nobilis*). *Journal of Fish Biology*, 19(4):457–465, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Amin:1981:SDE**

- [261] O. M. Amin. The seasonal distribution of *Echinorhynchus salmonis* (Acanthocephala: Echinorhynchidae) among rainbow smelt, *Osmerus mordax* Mitchell, in Lake Michigan. *Journal of Fish Biology*, 19(4):467–474, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1981:ADG**

- [262] B. R. Pollock. Age determination and growth of luderick, *Girella tricuspidata* (Quoy and Gaimard), taken from Moreton Bay, Australia. *Journal of Fish Biology*, 19(4):475–485, October 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1981:EBG**

- [263] J. F. Leatherland and R. N. Nuti. Effects of bovine growth hormone on plasma FFA concentrations and liver, muscle and carcass lipid content in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 19(5):487–498, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lincoln:1981:SMF**

- [264] R. F. Lincoln. Sexual maturation in female triploid plaice, *Pleuronectes platessa*, and plaice  $\times$  flounder, *Platichthys flesus*, hybrids. *Journal of Fish Biology*, 19(5):499–508, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dixon:1981:IAD**

- [265] D. G. Dixon and J. W. Hilton. Influence of available dietary carbohydrate content on tolerance of waterborne copper by rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 19(5):509–518, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorpe:1981:TAS**

- [266] J. E. Thorpe, L. G. Ross, G. Struthers, and W. Watts. Tracking Atlantic salmon smolts, *Salmo salar* L., through Loch Voil, Scotland. *Journal of Fish Biology*, 19(5):519–537, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cooper:1981:EFP**

- [267] M. J. Cooper and G. A. Wheatley. An examination of the fish population in the River Trent, Nottinghamshire using angler catches. *Journal of Fish Biology*, 19(5):539–556, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jensen:1981:PRL**

- [268] A. L. Jensen. Population regulation in lake whitefish, *Coregonus clupeaformis* (Mitchill). *Journal of Fish Biology*, 19(5):557–573, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leknes:1981:USH**

- [269] I. L. Leknes and T. S. Sætersdal. On the ultrastructure of specific heart granules in teleosts. *Journal of Fish Biology*, 19(5):575–579, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Campagna:1981:GVR**

- [270] C. G. Campagna and J. J. Cech, Jr. Gill ventilation and respiratory efficiency of Sacramento blackfish, *Orthodon microlepidotus* Ayres, in hypoxic environments. *Journal of Fish Biology*, 19(5):581–591, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ottaway:1981:OSB**

- [271] E. M. Ottaway, P. A. Carling, A. Clarke, and N. A. Reader. Observations on the structure of brown trout, *Salmo trutta* Linnaeus, redds. *Journal of Fish Biology*, 19(5):593–607, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRh**

- [272] Anonymous. Book reviews. *Journal of Fish Biology*, 19(5):609–610, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1981:BRi**

- [273] Anonymous. Book received. *Journal of Fish Biology*, 19(5):610, November 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezeasor:1981:FSG**

- [274] D. N. Ezeasor. The fine structure of the gastric epithelium of the rainbow trout, *Salmo gairdneri*, Richardson. *Journal of Fish Biology*, 19(6):611–627, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shireman:1981:UGC**

- [275] J. V. Shireman and M. J. Maceina. The utilization of grass carp, *Ctenopharyngodon idella* Val., for hydrilla control in Lake Baldwin, Florida. *Journal of Fish Biology*, 19(6):629–636, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whoriskey:1981:ESR**

- [276] F. G. Whoriskey, R. J. Naiman, and W. Linn Montgomery. Experimental sea ranching of brook trout, *Salvelinus fontinalis* Mitchill. *Journal of Fish Biology*, 19(6):637–651, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Moon:1981:AAT**

- [277] T. W. Moon and I. A. Johnston. Amino acid transport and interconversions in tissues of freshly caught and food-deprived plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 19(6):653–663, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goldspink:1981:NGR**

- [278] C. R. Goldspink. A note on the growth-rate and year-class strength of bream, *Abramis brama* (L.), in three eutrophic lakes, England. *Journal of Fish Biology*, 19(6):665–673, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Seymour:1981:EPC**

- [279] E. A. Seymour. The effects of powdered carp pituitary on ovarian development, ovarian ascorbic acid and ovulation in *Carassius carassius* L. exposed to various photoperiod and temperature regimes. *Journal of Fish Biology*, 19(6):675–682, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tsai:1981:ESS**

- [280] Chu fa Tsai and Kwei yang Chang. Effect of sex and size on copper susceptibility of the common guppy, *Lebistes reticulatus* (Peter). *Journal of Fish Biology*, 19(6):683–689, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Michibata:1981:UDC**

- [281] Hitoshi Michibata. Uptake and distribution of cadmium in the egg of the teleost, *Oryzias latipes*. *Journal of Fish Biology*, 19(6):691–696, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gibson:1981:BNG**

- [282] R. N. Gibson and I. A. Ezzi. The biology of the Norway goby, *Pomatoschistus norvegicus* (Collett), on the west coast of Scotland. *Journal of Fish Biology*, 19(6):697–714, December 1981. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reynolds:1982:TBD**

- [283] W. W. Reynolds and M. E. Casterlin. Thermoregulatory behaviour, diel activity and the relationship of spontaneous locomotor activity to temperature in the sea raven, *Hemirhamphus americanus* (Gmelin). *Journal of Fish Biology*, 20(1):1–4, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yamada:1982:SMH**

- [284] S. Behrens Yamada and T. J. Mulligan. Strontium marking of hatchery reared Coho salmon, *Oncorhynchus kisutch* Walbaum, identification of adults. *Journal of Fish Biology*, 20(1):5–9, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woo:1982:SAS**

- [285] N. Y. S. Woo and W. C. M. Tong. Salinity adaptation in the snakehead, *Ophiocephalus maculatus* Lacépède: changes in oxygen consumption, branchial  $\text{Na}^+\text{-K}^+\text{-ATPase}$  and body composition. *Journal of Fish Biology*, 20(1):11–19, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bregazzi:1982:RPP**

- [286] P. R. Bregazzi and C. R. Kennedy. The responses of a perch, *Perca fluviatilis* L., population to eutrophication and associated changes in

fish fauna in a small lake. *Journal of Fish Biology*, 20(1):21–31, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anderson:1982:IBG**

- [287] M. Anderson. The identification of the British grey mullets. *Journal of Fish Biology*, 20(1):33–38, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barton:1982:PCS**

- [288] B. A. Barton and R. E. Peter. Plasma cortisol stress response in fingerling rainbow trout, *Salmo gairdneri* Richardson, to various transport conditions, anaesthesia, and cold shock. *Journal of Fish Biology*, 20(1):39–51, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ezeasor:1982:DUT**

- [289] D. N. Ezeasor. Distribution and ultrastructure of taste buds in the oropharyngeal cavity of the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 20(1):53–68, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hilton:1982:EPF**

- [290] J. W. Hilton. The effect of pre-fasting diet and water temperature on liver glycogen and liver weight in rainbow trout, *Salmo gairdneri* Richardson, during fasting. *Journal of Fish Biology*, 20(1):69–78, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nordlie:1982:OOR**

- [291] F. G. Nordlie, W. A. Szelistowski, and W. C. Nordlie. Ontogenesis of osmotic regulation in the striped mullet, *Mugil cephalus* L. *Journal of Fish Biology*, 20(1):79–86, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kumaraguru:1982:DCP**

- [292] A. K. Kumaraguru, F. W. H. Beamish, and H. W. Ferguson. Direct and circulatory paths of permethrin (NRDC-143) causing histopathological changes in the gills of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 20(1):87–91, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lone:1982:BRE**

- [293] K. P. Lone and A. J. Matty. Book review: The effect of feeding 11-ketotestosterone on the food conversion efficiency and tissue protein and

nucleic acid contents of juvenile carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 20(1):93–104, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hunt:1982:BRS**

- [294] S. M. V. Hunt, T. H. Simpson, and R. S. Wright. Book review: Seasonal changes in the levels of 11-oxotestosterone and testosterone in the serum of male salmon, *Salmo salar* L., and their relationship to growth and maturation cycle. *Journal of Fish Biology*, 20(1):105–119, January 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Swinney:1982:DTH**

- [295] G. N. Swinney and T. F. Coles. Description of two hybrids involving silver bream, *Blicca bjoerkna* (L.), from British waters. *Journal of Fish Biology*, 20(2):121–129, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoss:1982:DFS**

- [296] D. E. Hoss and J. H. S. Blaxter. Development and function of the swimbladder-inner ear-lateral line system in the Atlantic menhaden, *Brevoortia tyrannus* (Latrobe). *Journal of Fish Biology*, 20(2):131–142, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Forberg:1982:HSD**

- [297] K. G. Forberg. A histological study of development of oocytes in capelin, *Mallotus villosus villosus* (Müller). *Journal of Fish Biology*, 20(2):143–154, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matallanas:1982:FHS**

- [298] J. Matallanas. Feeding habits of *Scymnorhinus licha* in Catalan waters. *Journal of Fish Biology*, 20(2):155–163, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1982:IBG**

- [299] A. H. Weatherley and H. S. Gill. Influence of bovine growth hormone on the growth dynamics of mosaic muscle in relation to somatic growth of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 20(2):165–172, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robotham:1982:ASF**

- [300] P. W. J. Robotham. An analysis of a specialized feeding mechanism of the spined loach, *Cobitis taenia* (L.), and a description of the related structures. *Journal of Fish Biology*, 20(2):173–181, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thomas:1982:AAS**

- [301] P. Thomas, M. Bally, and J. M. Neff. Ascorbic acid status of mullet, *Mugil cephalus* Linn., exposed to cadmium. *Journal of Fish Biology*, 20(2):183–196, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Badcock:1982:NSD**

- [302] J. Badcock. A new species of the deep-sea fish genus *Cyclothone* Goode & Bean (Stomiatoidei, Gonostomatidae) from the tropical Atlantic. *Journal of Fish Biology*, 20(2):197–211, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yoakim:1982:UAS**

- [303] E. G. Yoakim and J. M. Grizzle. Ultrastructure of alarm substance cells in the epidermis of the channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 20(2):213–221, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gray:1982:CTG**

- [304] R. H. Gray, T. L. Page, M. G. Saroglia, and P. Bronzi. Comparative tolerance to gas supersaturated water of carp, *Cyprinus carpio*, and black bullhead, *Ictalurus melas*, from the U.S.A. and Italy. *Journal of Fish Biology*, 20(2):223–227, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1982:RBT**

- [305] A. D. Pickering, T. G. Pottinger, and P. Christie. Recovery of the brown trout, *Salmo trutta* L., from acute handling stress: a time-course study. *Journal of Fish Biology*, 20(2):229–244, February 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1982:MMY**

- [306] B. R. Pollock. Movements and migrations of yellowfin bream, *Acanthopagrus australis* (Günther), in Moreton Bay, Queensland as determined by tag recoveries. *Journal of Fish Biology*, 20(3):245–252, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Wolters:1982:ENM**

- [307] W. R. Wolters, C. L. Chrisman, and G. S. Libey. Erythrocyte nuclear measurements of diploid and triploid channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 20(3):253–258, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stephens:1982:RGM**

- [308] R. T. T. Stephens. Reproduction, growth and mortality of the common bully, *Gobiomorphus cotidianus* McDowall, in a eutrophic New Zealand lake. *Journal of Fish Biology*, 20(3):259–270, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shafi:1982:SAB**

- [309] M. Shafi and B. M. Jasim. Some aspects of the biology of a cyprinid, *Aspius vorax* Heckel. *Journal of Fish Biology*, 20(3):271–278, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Buck:1982:DMP**

- [310] R. J. G. Buck and A. F. Youngson. The downstream migration of precociously mature Atlantic salmon, *Salmo salar* L, parr in autumn; its relation to the spawning migration of mature adult fish. *Journal of Fish Biology*, 20(3):279–288, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hofer:1982:DGP**

- [311] R. Hofer, H. Forstner, and R. Rettenwander. Duration of gut passage and its dependence on temperature and food consumption in roach, *Rutilus rutilus* L: laboratory and field experiments. *Journal of Fish Biology*, 20(3):289–299, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miller:1982:ECI**

- [312] N. W. Miller and M. R. Tripp. The effect of captivity on the immune response of the killifish, *Fundulus heteroclitus* L. *Journal of Fish Biology*, 20(3):301–308, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miller:1982:ISS**

- [313] N. W. Miller and M. R. Tripp. An immunoinhibitory substance in the serum of laboratory held killifish, *Fundulus heteroclitus* L. *Journal of Fish Biology*, 20(3):309–316, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rinne:1982:OMP**

- [314] J. N. Rinne and B. Wanjala. Observations on movement patterns of *Tilapia* spp. in Nyanza Gulf, Lake Victoria, East Africa. *Journal of Fish Biology*, 20(3):317–322, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hulata:1982:ECA**

- [315] G. Hulata, R. Moav, and G. Wohlfarth. Effects of crowding and availability of food on growth rate of fry in the European and Chinese races of the common carp. *Journal of Fish Biology*, 20(3):323–327, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jacob:1982:FFH**

- [316] Sheila Susan Jacob and N. Balakrishnan Nair. Food and feeding habits of the larvivorous fish *Aplocheilus lineatus* (Cuv. & Val.) in its natural habitat. *Journal of Fish Biology*, 20(3):329–339, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Maxwell:1982:IJM**

- [317] J. Garrey H. Maxwell. Infestation of the jack mackerel, *Trachurus declivis* (Jenyns), with the cymothoid isopod, *Ceratothoa imbricatus* (Fabricus), in south eastern Australian waters. *Journal of Fish Biology*, 20(3):341–349, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nahas:1982:SAS**

- [318] R. Nahhas, N. V. Jones, and G. Goldspink. Some aspects of sustained training of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 20(3):351–358, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nelson:1982:POD**

- [319] J. A. Nelson. Physiological observations on developing rainbow trout, *Salmo gairdneri* (Richardson), exposed to low pH and varied calcium ion concentrations. *Journal of Fish Biology*, 20(3):359–372, March 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goven:1982:MTC**

- [320] Beverly A. Goven and Donald F. Amend. Mebendazole/trichlorfon combination: a new anthelmintic for removing monogenetic trematodes from fish. *Journal of Fish Biology*, 20(4):373–378, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Carpene:1982:HFT**

- [321] E. Carpenè, A. Veggetti, and F. Mascarello. Histochemical fibre types in the lateral muscle of fishes in fresh, brackish and salt water. *Journal of Fish Biology*, 20(4):379–396, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robb:1982:HOR**

- [322] A. P. Robb. Histological observations on the reproductive biology of the haddock, *Melanogrammus aeglefinus* (L.). *Journal of Fish Biology*, 20(4):397–408, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Allen:1982:ERT**

- [323] J. R. M. Allen and R. J. Wootton. The effect of ration and temperature on the growth of the three-spined stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 20(4):409–422, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1982:NGM**

- [324] J. F. Craig. A note on growth and mortality of trout, *Salmo trutta* L., in afferent streams of Windermere. *Journal of Fish Biology*, 20(4):423–429, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1982:SOE**

- [325] M. Jobling. Some observations on the effects of feeding frequency on the food intake and growth of plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 20(4):431–444, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Korsgaard:1982:CAL**

- [326] B. Korsgaard. Changes in activity levels of glutamate dehydrogenase and two transaminases of maternal liver during reproduction and after administration of oestradiol and progesterone in *Zoarcetes viviparus* (L.). *Journal of Fish Biology*, 20(4):445–454, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1982:EPA**

- [327] A. D. Woodhead, R. B. Setlow, and V. Pond. Effects of polycyclic aromatic hydrocarbons on the proliferation of ectopic thyroid tissue in *Poecilia formosa*, the Amazon molly. *Journal of Fish Biology*, 20(4):455–463,

April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marshall:1982:IRF**

- [328] B. E. Marshall. The influence of river flow on pelagic sardine catches in Lake Kariba. *Journal of Fish Biology*, 20(4):465–469, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Witthames:1982:AMA**

- [329] P. R. Witthames and M. Greer Walker. The activity of myofibrillar and actomyosin ATPase in the skeletal muscle of some marine teleosts in relation to their length and age. *Journal of Fish Biology*, 20(4):471–478, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1982:OCA**

- [330] A. H. Weatherley, S. C. Rogers, D. G. Pincock, and J. R. Patch. Oxygen consumption of active rainbow trout, *Salmo gairdneri* Richardson, derived from electromyograms obtained by radiotelemetry. *Journal of Fish Biology*, 20(4):479–489, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stagg:1982:ACP**

- [331] R. M. Stagg and T. J. Shuttleworth. The accumulation of copper in *Platichthys flesus* L. and its effects on plasma electrolyte concentrations. *Journal of Fish Biology*, 20(4):491–500, April 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1982:SSF**

- [332] M. Jobling. A study of some factors affecting rates of oxygen consumption of plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 20(5):501–516, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1982:VCC**

- [333] J. F. Craig and J. M. Fletcher. The variability in the catches of charr, *Salvelinus alpinus* L., and perch, *Perca fluviatilis* L., from multi-mesh gill nets. *Journal of Fish Biology*, 20(5):517–526, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eliassen:1982:SVG**

- [334] J.-E. Eliassen and O. Vahl. Seasonal variations in the gonad size and the protein and water content of cod, *Gadus morhua* (L.), muscle from

Northern Norway. *Journal of Fish Biology*, 20(5):527–533, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hille:1982:LRB**

- [335] S. Hille. A literature review of the blood chemistry of rainbow trout, *Salmo gairdneri* Rich. *Journal of Fish Biology*, 20(5):535–569, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ajayi:1982:MSY**

- [336] T. O. Ajayi. The maximum sustainable yields of the inshore fish and shrimp resources of the Nigerian continental shelf. *Journal of Fish Biology*, 20(5):571–577, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1982:DSU**

- [337] G. J. A. Kennedy and C. D. Strange. The distribution of salmonids in upland streams in relation to depth and gradient. *Journal of Fish Biology*, 20(5):579–591, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lacey:1982:NOD**

- [338] S. M. Lacey, I. C. Williams, and A. C. Carpenter. A note on the occurrence of the digenetic trematode *Sphaerostoma bramae* (Müller) in the intestine of the European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 20(5):593–596, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lone:1982:CBC**

- [339] K. P. Lone, B. W. Inch, and A. J. Matty. Changes in the blood chemistry of rainbow trout, *Salmo gairdneri* rich, in relation to dietary protein level, and an anabolic steroid hormone, ethylestrenol. *Journal of Fish Biology*, 20(5):597–606, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grove:1982:NAF**

- [340] D. J. Grove and L. B. Roberts. A note on an abnormal fin in *Raja clavata* L. *Journal of Fish Biology*, 20(5):607–609, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gumaa:1982:RDR**

- [341] S. A. Gumaa'a. Retinal development and retinomotor responses in perch, *Perca fluviatilis* L. *Journal of Fish Biology*, 20(5):611–618, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:BRa**

- [342] Anonymous. Book reviews. *Journal of Fish Biology*, 20(5):619–622, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:BRb**

- [343] Anonymous. Books received. *Journal of Fish Biology*, 20(5):622–623, May 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1982:OCF**

- [344] D. E. Wright and A. Eastcott. Operant conditioning of feeding behaviour and patterns of feeding in thick lipped mullet, *Crenimugil labrosus* (Risso) and common carp, *Cyprinus carpio* (L.). *Journal of Fish Biology*, 20(6):625–634, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jiming:1982:DFF**

- [345] Yang Jiming. The dominant fish fauna in the North Sea and its determination. *Journal of Fish Biology*, 20(6):635–643, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mills:1982:FAS**

- [346] C. A. Mills. Factors affecting the survival of dace, *Leuciscus leuciscus* (L.), in the early post-hatching period. *Journal of Fish Biology*, 20(6):645–655, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mahajan:1982:RCS**

- [347] C. L. Mahajan and T. R. Dheer. Regenerative capacity of the spleen in a splenectomized fish, *Channa punctatus* Bloch, with related investigations into changes in peripheral blood and haematopoiesis. *Journal of Fish Biology*, 20(6):657–666, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Muller:1982:EFI**

- [348] R. G. Muller, R. S. Benda, and T. G. Powell. Exploitation of fish in the inner Kavirondo Gulf of Lake Victoria based on tag returns. *Journal of Fish Biology*, 20(6):667–671, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tandler:1982:EFA**

- [349] A. Tandler, B. A. Berg, G. Wm. Kissil, and A. M. Mackie. Effect of food attractants on appetite and growth rate of gilthead bream, *Sparus aurata* L. *Journal of Fish Biology*, 20(6):673–681, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Singh:1982:VSI**

- [350] Sukhdev M. Singh and P. M. Sivalingam. In vitro study on the interactive effects of heavy metals on catalase activity of *Sarotherodon mossambicus* (Peters). *Journal of Fish Biology*, 20(6):683–688, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wandsvik:1982:OGR**

- [351] A. Wandsvik and M. Jobling. Observations on growth rates of Arctic charr, *Salvelinus alpinus* (L.), reared at low temperature. *Journal of Fish Biology*, 20(6):689–699, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wandsvik:1982:OMM**

- [352] A. Wandsvik and M. Jobling. Overwintering mortality of migratory Arctic charr, *Salvelinus alpinus*, (L.) reared in salt water. *Journal of Fish Biology*, 20(6):701–706, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eliassen:1982:SVB**

- [353] Jens-Eric Eliassen and Ola Vahl. Seasonal variations in biochemical composition and energy content of liver, gonad and muscle of mature and immature cod, *Gadus morhua* (L.) from Balsfjorden, northern Norway. *Journal of Fish Biology*, 20(6):707–716, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dunkley:1982:APR**

- [354] D. A. Dunkley and W. M. Shearer. An assessment of the performance of a resistivity fish counter. *Journal of Fish Biology*, 20(6):717–737, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:BRc**

- [355] Anonymous. Book reviews. *Journal of Fish Biology*, 20(6):739–740, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:SBD**

- [356] Anonymous. Synopses of biological data on eight species of scombrids. *Journal of Fish Biology*, 20(6):741, June 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lane:1982:SAR**

- [357] H. C. Lane, J. W. Weaver, J. A. Benson, and H. A. Nichols. Some age related changes of adult rainbow trout, *Salmo gairdneri* Rich., peripheral erythrocytes separated by velocity sedimentation at unit gravity. *Journal of Fish Biology*, 21(1):1–14, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heggberget:1982:IGS**

- [358] T. G. Heggberget and B. O. Johnsen. Infestations by *Gyrodactylus* sp. of Atlantic salmon, *Salmo salar* L., in Norwegian rivers. *Journal of Fish Biology*, 21(1):15–26, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatner:1982:MTS**

- [359] Mary F. Tatner and Margaret J. Manning. The morphology of the trout, *Salmo gairdneri* Richardson, thymus: some practical and theoretical considerations. *Journal of Fish Biology*, 21(1):27–32, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lone:1982:CEA**

- [360] K. P. Lone and A. J. Matty. Cellular effects of adrenosterone feeding to juvenile carp, *Cyprinus carpio* L., effect on liver, kidney, brain and muscle protein and nucleic acids. *Journal of Fish Biology*, 21(1):33–45, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodworth:1982:CTR**

- [361] J. Woodworth and D. Pascoe. Cadmium toxicity to rainbow trout, *Salmo gairdneri* Richardson: a study of eggs and alevins. *Journal of Fish Biology*, 21(1):47–57, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1982:NDE**

- [362] A. D. Woodhead and Paulette C. Bryant. A note on the distribution of ectopic thyroid tissue in five species of poeciliid fishes. *Journal of Fish Biology*, 21(1):59–62, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Kilambi:1982:FIG**

- [363] R. V. Kilambi and A. Zdinak. Food intake and growth of hybrid carp (female grass carp, *Ctenopharyngodon idella* × male bighead, *Aristichthys (Hypophthalmichthys) nobilis*) fed on zooplankton and Chara. *Journal of Fish Biology*, 21(1):63–67, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nash:1982:BFG**

- [364] R. D. M. Nash. The biology of Fries' goby, *Lesueurigobius friesii* (Malm), in the Firth of Clyde, Scotland, and a comparison with other stocks. *Journal of Fish Biology*, 21(1):69–85, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beumer:1982:SAI**

- [365] J. P. Beumer and G. J. Bacher. Species of *Anguilla* as indicators of mercury in the coastal rivers and lakes of Victoria, Australia. *Journal of Fish Biology*, 21(1):87–94, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Allen:1982:AGR**

- [366] J. R. M. Allen and R. J. Wootton. Age, growth and rate of food consumption in an upland population of the three-spined stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 21(1):95–105, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Billy:1982:EFI**

- [367] Allen J. Billy. The effects of formalin and isopropyl alcohol on length and weight measurements of *Sarotherodon mossambicus* Trewavas. *Journal of Fish Biology*, 21(1):107–112, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eurell:1982:HUL**

- [368] J. A. Eurell and W. E. Haensly. The histology and ultrastructure of the liver of Atlantic croaker *Micropogon undulatus* L. *Journal of Fish Biology*, 21(1):113–125, July 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1982:RVC**

- [369] N. W. Pankhurst. Relation of visual changes to the onset of sexual maturation in the European eel *Anguilla anguilla* (L.). *Journal of Fish Biology*, 21(2):127–140, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Egglishaw:1982:IWD**

- [370] H. J. Egglishaw and P. E. Shackley. Influence of water depth on dispersion of juvenile salmonids, *Salmo salar* L. and *S. trutta* L., in a Scottish stream. *Journal of Fish Biology*, 21(2):141–155, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hails:1982:RBT**

- [371] A. J. Hails and Z. Abdullah. Reproductive biology of the tropical fish *Trichogaster pectoralis* (Regan). *Journal of Fish Biology*, 21(2):157–170, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sameoto:1982:VDA**

- [372] D. Sameoto. Vertical distribution and abundance of the Peruvian anchovy, *Engraulis ringens*, and sardine, *Sardinops sagax*, larvae during November 1977. *Journal of Fish Biology*, 21(2):171–186, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1982:FHS**

- [373] E. J. Hyslop. The feeding habits of 0+ stone loach, *Noemacheilus bavatulus* (L.), and bullhead, *Cottus gobio* L. *Journal of Fish Biology*, 21(2):187–196, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Casillas:1982:OAC**

- [374] E. Casillas, J. Sundquist, and W. E. Ames. Optimization of assay conditions for, and the selected tissue distribution of, alanine aminotransferase and aspartate aminotransferase of English sole, *Parophrys vetulus* Girard. *Journal of Fish Biology*, 21(2):197–204, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gill:1982:HCM**

- [375] H. S. Gill, A. H. Weatherley, and T. Bhesania. Histochemical characterization of myotomal muscle in the bluntnose minnow, *Pimephales notatus* Rafinesque. *Journal of Fish Biology*, 21(2):205–214, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Duthie:1982:ESS**

- [376] G. G. Duthie and D. F. Houlihan. The effect of single step and fluctuating temperature changes on the oxygen consumption of flounders, *Platichthys flesus* (L.): Lack of temperature adaptation. *Journal of Fish Biology*, 21

(2):215–226, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stott:1982:NCB**

- [377] F. C. Stott. A note on catches of basking sharks, *Cetorhinus maximus* (Gunnerus), off Norway and their relation to possible migration paths. *Journal of Fish Biology*, 21(2):227–230, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Newsome:1982:ASD**

- [378] C. S. Newsome and R. D. Piron. Aetiology of skeletal deformities in the Zebra Danio fish (*Brachydanio rerio*, Hamilton-Buchanan). *Journal of Fish Biology*, 21(2):231–237, August 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barahona-Fernandes:1982:BDH**

- [379] M. H. Barahona-Fernandes. Body deformation in hatchery reared European sea bass *Dicentrarchus labrax* (L.) Types, prevalence and effect on fish survival. *Journal of Fish Biology*, 21(3):239–249, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Badsha:1982:POH**

- [380] K. S. Badsha and C. R. Goldspink. Preliminary observations on the heavy metal content of four species of freshwater fish in NW England. *Journal of Fish Biology*, 21(3):251–267, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Swift:1982:CSB**

- [381] D. J. Swift. Changes in selected blood component values of rainbow trout, *Salmo gairdneri* Richardson, following the blocking of the cortisol stress response with betamethasone and subsequent exposure to phenol or hypoxia. *Journal of Fish Biology*, 21(3):269–277, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1982:SCI**

- [382] N. W. Pankhurst and J. N. Lythgoe. Structure and colour of the integument of the European eel *Anguilla anguilla* (L.). *Journal of Fish Biology*, 21(3):279–296, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jenkins:1982:EOD**

- [383] N. Jenkins and J. M. Dodd. Effects of ovariectomy of the dogfish *Scyliorhinus canicula* L. on circulating levels of androgen and oestra-

diol and on pituitary gonadotrophin content. *Journal of Fish Biology*, 21 (3):297–303, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Breazile:1982:SHP**

- [384] J. E. Breazile, L. L. Zinn, J. C. Yauk, H. J. Mass, and J. Wollscheid. A study of haematological profiles of channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 21(3):305–309, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1982:ECT**

- [385] J. F. Leatherland. Effect of a commercial trout diet on liver ultrastructure of fed and fasted yearling Coho salmon, *Oncorhynchus kisutch* Walbaum. *Journal of Fish Biology*, 21(3):311–319, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beaumont:1982:ASF**

- [386] W. R. C. Beaumont. An aberration in the scale formation of the dace *Leuciscus leuciscus* (L.). *Journal of Fish Biology*, 21(3):321–324, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milner:1982:AZG**

- [387] N. J. Milner. The accumulation of zinc by O-group plaice, *Pleuronectes platessa* (L.), from high concentrations in sea water and food. *Journal of Fish Biology*, 21(3):325–336, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Collie:1982:CIF**

- [388] N. L. Collie and H. A. Bern. Changes in intestinal fluid transport associated with smoltification and seawater adaptation in Coho salmon, *Oncorhynchus kisutch* (Walbaum). *Journal of Fish Biology*, 21(3):337–348, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1982:SPG**

- [389] B. R. Pollock. Spawning period and growth of yellowfin bream, *Acanthopagrus australis* (Günther), in Moreton Bay, Australia. *Journal of Fish Biology*, 21(3):349–355, September 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1982:FGR**

- [390] M. Jobling. Food and growth relationships of the cod, *Gadus morhua* L., with special reference to balsfjorden, north Norway. *Journal of Fish*

*Biology*, 21(4):357–371, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hilton:1982:EEV**

- [391] J. W. Hilton and H. W. Ferguson. Effect of excess vitamin D<sub>3</sub> on calcium metabolism in rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 21(4):373–379, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bennett:1982:CUT**

- [392] R. O. Bennett and J. K. Dooley. Copper uptake by two sympatric species of killifish *Fundulus heteroclitus* (L.) and *F. majalis* (Walbaum). *Journal of Fish Biology*, 21(4):381–398, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Winemiller:1982:IDC**

- [393] K. O. Winemiller and D. H. Taylor. Inbreeding depression in the convict cichlid, *Cichlasoma nigrofasciatum* (Baird and Girard). *Journal of Fish Biology*, 21(4):399–402, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blay:1982:FAF**

- [394] J. Blay, Jr. and K. N. Eyeson. Feeding activity and food habits of the shad, *Ethmalosa fimbriata* (Bowdich), in the coastal waters of Cape Coast, Ghana. *Journal of Fish Biology*, 21(4):403–410, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ellgaard:1982:LAT**

- [395] E. G. Ellgaard and T. W. Rudner. Lead acetate: toxicity without effects on the locomotor activity of the bluegill sunfish, *Lepomis macrochirus* Rafinesque. *Journal of Fish Biology*, 21(4):411–415, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1982:CBM**

- [396] N. W. Pankhurst. Changes in body musculature with sexual maturation in the European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 21(4):417–428, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodward:1982:PCR**

- [397] J. J. Woodward. Plasma catecholamines in resting rainbow trout, *Salmo gairdneri* Richardson, by high pressure liquid chromatography. *Journal*

of *Fish Biology*, 21(4):429–432, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aneer:1982:SDI**

- [398] G. Aneer and S. Nellbring. A SCUBA-diving investigation of Baltic herring (*Clupea harengus membras* L.) spawning grounds in the Askö-Landsort area, northern Baltic proper. *Journal of Fish Biology*, 21(4):433–442, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burse:1982:ETN**

- [399] C. R. Bursey. *Eustrongylides tubifex* (Nitzsch) encystment in an American eel *Anguilla rostrata* (Le Sueur). *Journal of Fish Biology*, 21(4):443–447, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shyamasundari:1982:OPM**

- [400] K. Shyamasundari, V. J. V. Raja Kumari, and K. Hanumantha Rao. Observations on the pancreas of the marine lizard fish *Saurida tumbil* (Bloch). *Journal of Fish Biology*, 21(4):449–454, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gordon:1982:JSP**

- [401] D. J. Gordon and H. R. MacCrimmon. Juvenile salmonid production in a Lake Erie nursery stream. *Journal of Fish Biology*, 21(4):455–473, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Young:1982:EPH**

- [402] P. C. Young and R. B. Martin. Evidence for protogynous hermaphroditism in some lethrinid fishes. *Journal of Fish Biology*, 21(4):475–484, October 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blay:1982:ORB**

- [403] J. Blay, Jr. and K. N. Eyeson. Observations on the reproductive biology of the shad, *Ethmalosa fimbriata* (Bowdich), in the coastal waters of Cape Coast, Ghana. *Journal of Fish Biology*, 21(5):485–496, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Peters:1982:ESS**

- [404] G. Peters. The effect of stress on the stomach of the European eel, *Anguilla anguilla* L. *Journal of Fish Biology*, 21(5):497–512, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Middleton:1982:OGA**

- [405] M. J. Middleton. The Oriental Goby, *Acanthogobius flavimanus* (Temminck and Schlegel), an introduced fish in the coastal waters of New South Wales, Australia. *Journal of Fish Biology*, 21(5):513–523, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ono:1982:PEM**

- [406] R. D. Ono. Proprioceptive endings in the myotomes of the pickarel (Teleostei: Esocidae). *Journal of Fish Biology*, 21(5):525–535, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Allen:1982:EFG**

- [407] J. R. M. Allen and R. J. Wootton. Effect of food on the growth of carcase, liver and ovary in female *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 21(5):537–547, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1982:CSS**

- [408] N. W. Pankhurst. Changes in the skin-scale complex with sexual maturation in the European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 21(5):549–561, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Solanki:1982:CMC**

- [409] T. G. Solanki and M. Benjamin. Changes in the mucous cells of the gills, buccal cavity and epidermis of the nine-spined stickleback, *Pungitius pungitius* L., induced by transferring the fish to sea water. *Journal of Fish Biology*, 21(5):563–575, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Soofiani:1982:ECD**

- [410] N. M. Soofiani and A. D. Hawkins. Energetic costs at different levels of feeding in juvenile cod, *Gadus morhua* L. *Journal of Fish Biology*, 21(5):577–592, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bianco:1982:HBA**

- [411] P. G. Bianco. Hybridization between *Alburnus albidus* (C.) and *Leuciscus cephalus cabeda* R. in Italy. *Journal of Fish Biology*, 21(5):593–603, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:BRd**

- [412] Anonymous. Book reviews. *Journal of Fish Biology*, 21(5):605–606, November 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alvarez-Lajonchere:1982:FMP**

- [413] L. Alvarez-Lajonchere. The fecundity of mullet (Pisces, Mugilidae) from Cuban waters. *Journal of Fish Biology*, 21(6):607–613, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hirji:1982:LAA**

- [414] K. N. Hirji and W. A. M. Courtney. Leucine aminopeptidase activity in the digestive tract of perch, *Perca fluviatilis* L. *Journal of Fish Biology*, 21(6):615–622, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saldanha:1982:NSD**

- [415] L. Saldanha and N. R. Merrett. A new species of the deep-sea eel genus *Ilyophis* Gilbert (Synbranchidae) from the eastern North Atlantic, with comments on its ecology and intrafamilial relationships. *Journal of Fish Biology*, 21(6):623–636, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reimer:1982:IDD**

- [416] G. Reimer. The influence of diet on the digestive enzymes of the Amazon fish Matrinchã, *Brycon cf. melanopterus*. *Journal of Fish Biology*, 21(6):637–642, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**George:1982:RAP**

- [417] C. J. George, A. E. Ellis, and D. W. Bruno. On remembrance of the abdominal pores in rainbow trout, *Salmo gairdneri* Richardson, and some other salmonid spp. *Journal of Fish Biology*, 21(6):643–647, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pulsford:1982:CTI**

- [418] A. Pulsford, R. Fänge, and W. J. W. Morrow. Cell types and interactions in the spleen of the dogfish *Scyliorhinus canicula* L.: an electron microscopic study. *Journal of Fish Biology*, 21(6):649–662, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Talbot:1982:OGB**

- [419] C. Talbot and P. J. Higgins. Observations on the gall bladder of juvenile Atlantic salmon *Salmo salar* L., in relation to feeding. *Journal of Fish Biology*, 21(6):663–669, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kimura:1982:ERR**

- [420] L. H. Kimura, M. A. Abad, and Y. Hokama. Evaluation of the radioimmunoassay (RIA) for detection of ciguatoxin (CTX) in fish tissues. *Journal of Fish Biology*, 21(6):671–680, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jeziarska:1982:LMD**

- [421] B. Jeziarska, J. R. Hazel, and S. D. Gerking. Lipid mobilization during starvation in the rainbow trout, *Salmo gairdneri* Richardson, with attention to fatty acids. *Journal of Fish Biology*, 21(6):681–692, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1982:AAS**

- [422] D. E. Wright and A. Eastcott. Association of an acoustic signal with operant conditioned feeding responses in thicklipped mullet, *Crenimugil labrosus* (Risso) and common carp, *Cyprinus carpio* (L.). *Journal of Fish Biology*, 21(6):693–698, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robotham:1982:ISL**

- [423] P. W. J. Robotham and J. S. Thomas. Infection of the spined loach, *Cobitis taenia* (L.), by the digenean, *Allocreadium transversale* (Rud.). *Journal of Fish Biology*, 21(6):699–703, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stott:1982:NBP**

- [424] F. C. Stott. Notes on the biology of the Patagonian hake, *Merluccius hubbsi* (Marini), the southern blue whiting, *Micromesistius australis* (Norman) and others in the Falkland Islands shelf area. *Journal of Fish Biology*, 21(6):705–714, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1982:BRe**

- [425] Anonymous. Book reviews. *Journal of Fish Biology*, 21(6):715–718, December 1982. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hirji:1983:NSC**

- [426] K. N. Hirji and W. A. M. Courtney. Non-specific carboxylic esterase activity in the digestive tract of the perch, *Perca fluviatilis* L. *Journal of Fish Biology*, 22(1):1–7, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chervinski:1983:STM**

- [427] J. Chervinski. Salinity tolerance of the mosquito fish, *Gambusia affinis* (Baird and Girard). *Journal of Fish Biology*, 22(1):9–11, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lee:1983:ICM**

- [428] C.-S. Lee and F. Hu. Influences of Ca and Mg ions on the egg survival of grey mullet, *Mugil cephalus* L. *Journal of Fish Biology*, 22(1):13–20, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nottage:1983:BSB**

- [429] A. S. Nottage and E. J. Perkins. The biology of solenette, *Buglossidium luteum* (Risso), in the Solway Firth. *Journal of Fish Biology*, 22(1):21–27, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anyanwu:1983:PIP**

- [430] A. O. Anyanwu. Parasitic infestations of *Pseudotolithus* spp. off the coast of Lagos, Nigeria. *Journal of Fish Biology*, 22(1):29–33, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cassani:1983:FBY**

- [431] J. R. Cassani and W. E. Caton. Feeding behaviour of yearling and older hybrid grass carp. *Journal of Fish Biology*, 22(1):35–41, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1983:RGT**

- [432] A. H. Weatherley and H. S. Gill. Relative growth of tissues at different somatic growth rates in rainbow trout *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 22(1):43–60, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1983:FAL**

- [433] P. C. Blaxhall. Factors affecting lymphocyte culture for chromosome studies. *Journal of Fish Biology*, 22(1):61–76, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hartley:1983:MOM**

- [434] S. E. Hartley and M. T. Horne. A method for obtaining mitotic figures from blood leucocyte cultures of rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 22(1):77–82, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mellinger:1983:ECD**

- [435] J. Mellinger. Egg-case diversity among dogfish, *Scyliorhinus canicula* (L.): a study of egg laying rate and nidamental gland secretory activity. *Journal of Fish Biology*, 22(1):83–90, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agrawal:1983:HHS**

- [436] N. K. Agrawal and C. L. Mahajan. Haematological and haematopoietic studies in pyridoxine deficient fish, *Channa punctatus* Bloch. *Journal of Fish Biology*, 22(1):91–103, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Oni:1983:CPT**

- [437] S. K. Oni, J. Y. Olayemi, and J. D. Adegboye. Comparative physiology of three ecologically distinct freshwater fishes, *Alestes nurse* Ruppell, *Synodontis schall* Broch & Schneider and *Tilapia zillii* Gervais. *Journal of Fish Biology*, 22(1):105–109, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mahajan:1983:HHR**

- [438] C. L. Mahajan and T. R. Dheer. Haematological and haematopoietic responses to starvation in an air-breathing fish *channapunctatus* Bloch. *Journal of Fish Biology*, 22(1):111–123, January 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1983:AAF**

- [439] B. R. Pollock and M. J. Williams. An assessment of the angling fishery for yellowfin bream, *Acanthopagrus australis* (Günther), in Moreton Bay, Australia. *Journal of Fish Biology*, 22(2):125–132, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Petrere:1983:YPR**

- [440] M. Petrere, Jr. Yield per recruit of the Tambaqui, *Colossoma macropomum* Cuvier, in the Amazonas State, Brazil. *Journal of Fish Biology*, 22(2):133–144, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hirji:1983:OHH**

- [441] K. N. Hirji. Observations on the histology and histochemistry of the oesophagus of the perch, *Perca fluviatilis* L. *Journal of Fish Biology*, 22(2):145–152, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:GSF**

- [442] M. Jobling. Growth studies with fish — overcoming the problems of size variation. *Journal of Fish Biology*, 22(2):153–157, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**And:1983:CPS**

- [443] J. Plironen and H. Hyvärinen. Cry preservation of spermatozoa of the whitefish *Coregonus muksun* Pallas. *Journal of Fish Biology*, 22(2):159–163, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wilder:1983:RDR**

- [444] I. B. Wilder and J. G. Stanley. RNA-DNA ratio as an index to growth in salmonid fishes in the laboratory and in streams contaminated by carbaryl. *Journal of Fish Biology*, 22(2):165–172, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaber:1983:BCT**

- [445] S. J. M. Blaber and D. P. Cyrus. The biology of *Carangidae* (Teleostei) in Natal estuaries. *Journal of Fish Biology*, 22(2):173–188, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wood:1983:WDF**

- [446] C. M. Wood, J. D. Turner, and M. S. Graham. Why do fish die after severe exercise? *Journal of Fish Biology*, 22(2):189–201, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hails:1983:TCF**

- [447] A. J. Hails. Temporal changes in fat and protein levels in the tropical Anabantid *Trichogaster pectoralis* (Regan). *Journal of Fish Biology*, 22

(2):203–213, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alabaster:1983:ALT**

- [448] J. S. Alabaster, D. G. Shurben, and M. J. Mallett. The acute lethal toxicity of mixtures of cyanide and ammonia to smolts of salmon, *Salmo salar* L. at low concentrations of dissolved oxygen. *Journal of Fish Biology*, 22(2):215–222, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1983:EMS**

- [449] P. C. Blaxhall. Electron microscope studies of fish lymphocytes and thrombocytes. *Journal of Fish Biology*, 22(2):223–229, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**And:1983:NGG**

- [450] C. Geevarghese and P. A. John. A new goby, *Glossogobius minutus* (Teleostei: Gobiidae) from the south-west coast of India. *Journal of Fish Biology*, 22(2):231–240, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1983:PDD**

- [451] A. D. Woodhead and A. Bornbusch. The pattern of distribution of dimethylbenz(a)anthracene in the Amazon molly, *Poecilia formosa* (Girard), after intraperitoneal injection. *Journal of Fish Biology*, 22(2):241–248, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matallanas:1983:OMS**

- [452] J. Matallanas. The occurrence of Montagu's Sea Snail, *Liparis montagui* (Osteichthyes–Scorpaeniformes–Cyclopteridae) in the Bay of Biscay (Spain). *Journal of Fish Biology*, 22(2):249–250, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRa**

- [453] Anonymous. Book reviews. *Journal of Fish Biology*, 22(2):251–252, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:FMA**

- [454] Anonymous. Future meetings and announcements. *Journal of Fish Biology*, 22(2):252, February 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Worthington:1983:ISR**

- [455] A. D. Worthington, N. A. A. Macfarlane, and K. W. Easton. The induced spawning of roach, *Rutilus rutilus* (L.), with the antioestrogens clomiphene and tamoxifen. *Journal of Fish Biology*, 22(3):253–257, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ince:1983:SSI**

- [456] B. W. Ince. Secretin-stimulated insulin release in vivo in European eels, *Anguilla anguilla* L. *Journal of Fish Biology*, 22(3):259–263, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1983:NSDa**

- [457] N. R. Merrett. A new species of the deep-sea fish genus *Coryphaenoides gunnerus* (Macrouridae) from the tropical eastern North Atlantic and its relationship with *C. (Coryphaenoides) marshalli* Iwamoto, 1970. *Journal of Fish Biology*, 22(3):265–278, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1983:LCC**

- [458] P. C. Blaxhall. Lymphocyte culture for chromosome preparation. *Journal of Fish Biology*, 22(3):279–282, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brusle:1983:CSH**

- [459] S. Bruslé. Contribution to the sexuality of a hermaphroditic teleost, *Serranus hepatus* L. *Journal of Fish Biology*, 22(3):283–292, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mallatt:1983:LGL**

- [460] J. Mallatt. Laboratory growth of larval lampreys (*Lampetra (Entosphenus) tridentata* Richardson) at different food concentrations and animal densities. *Journal of Fish Biology*, 22(3):293–301, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**teKronnie:1983:MFT**

- [461] G. te Kronnie, L. Tatarczuch, W. van Raamsdonk, and W. Kilariski. Muscle fibre types in the myotome of stickleback, *Gasterosteus aculeatus* L.; a histochemical, immunohistochemical and ultrastructural study. *Journal of Fish Biology*, 22(3):303–316, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cooper:1983:RBP**

- [462] A. Cooper. The reproductive biology of poor-cod, *Trisopterus minutus* L., whiting, *Merlangius merlangus* L., and Norway pout, *Trisopterus esmarkii* Nilsson, off the west coast of Scotland. *Journal of Fish Biology*, 22(3):317–334, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1983:RLF**

- [463] T. E. Brown, A. W. Morley, N. T. Sanderson, and R. D. Tait. Report of a large fish kill resulting from natural acid water conditions in Australia. *Journal of Fish Biology*, 22(3):335–350, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Piironen:1983:CMS**

- [464] J. Piironen and H. Hyvärinen. Composition of the milt of some teleost fishes. *Journal of Fish Biology*, 22(3):351–361, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saxton:1983:SNP**

- [465] A. M. Saxton, R. N. Iwamoto, and W. K. Hershberger. Smoltification in the net-pen culture of accelerated Coho salmon, *Oncorhynchus kisutch* Walbaum: prediction of saltwater performance. *Journal of Fish Biology*, 22(3):363–370, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRb**

- [466] Anonymous. Book reviews. *Journal of Fish Biology*, 22(3):371–372, March 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cyrus:1983:FFE**

- [467] D. P. Cyrus and S. J. M. Blaber. The food and feeding ecology of *Gerreidae*, Bleeker 1859, in the estuaries of Natal. *Journal of Fish Biology*, 22(4):373–393, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ono:1983:DMI**

- [468] R. D. Ono. Dual motor innervation in the axial musculature of fishes. *Journal of Fish Biology*, 22(4):395–408, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1983:SOP**

- [469] B. R. Pollock, H. Weng, and R. M. Morton. The seasonal occurrence of postlarval stages of yellowfin bream, *Acanthopagrus australis* (Günther), and some factors affecting their movement into an estuary. *Journal of Fish Biology*, 22(4):409–415, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1983:CKF**

- [470] P. C. Blaxhall. Chromosome karyotyping of fish using conventional and G-banding methods. *Journal of Fish Biology*, 22(4):417–424, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mackie:1983:SCN**

- [471] A. M. Mackie and A. I. Mitchell. Studies on the chemical nature of feeding stimulants for the juvenile European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 22(4):425–430, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clark:1983:SGS**

- [472] E. R. Clark and J. A. L. Eraser. The survival and growth of six species of freshwater fish, in tapwater and diluted and undiluted effluent from sewage percolating filters. *Journal of Fish Biology*, 22(4):431–445, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Howells:1983:FIW**

- [473] E. J. Howells, M. E. Howells, and J. S. Alabaster. A field investigation of water quality, fish and invertebrates in the Mawddach river system, Wales. *Journal of Fish Biology*, 22(4):447–469, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:IBW**

- [474] M. Jobling. Influence of body weight and temperature on growth rates of Arctic charr, *Salvelinus alpinus* (L.). *Journal of Fish Biology*, 22(4):471–475, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barber:1983:CND**

- [475] D. L. Barber and J. E. Mills Westermann. Comparison of nuclear DNA content of rodlet cells and erythrocytes in some freshwater teleosts. *Journal of Fish Biology*, 22(4):477–484, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Forberg:1983:MCG**

- [476] K. G. Forberg. Maturity classification and growth of capelin, *Mallotus villosus villosus* (M), oocytes. *Journal of Fish Biology*, 22(4):485–496, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beck:1983:EMD**

- [477] M. L. Beck and C. J. Biggers. Erythrocyte measurements of diploid and triploid *Ctenopharyngodon idella* × *Hypophthalmichthys nobilis* hybrids. *Journal of Fish Biology*, 22(4):497–502, April 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Page:1983:CLE**

- [478] M. Page and A. F. Rowley. A cytochemical, light and electron microscopical study of the leucocytes of the adult river lamprey, *Lampetra fluviatilis* (L. Gray). *Journal of Fish Biology*, 22(5):503–517, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1983:ILC**

- [479] J. F. Leatherland and R. A. Sonstegard. Inter lake comparison of liver morphology and in vitro hepatic monodeiodination of L-thyroxine in sexually mature Coho salmon, *Oncorhynchus kisutch* Walbaum, from Lakes Erie, Ontario, Michigan and Superior. *Journal of Fish Biology*, 22(5):519–536, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gon:1983:BBS**

- [480] O. Gon and A. Ben-Tuvia. The biology of Boyer's sand smelt, *Atherina boyeri* Risso in the Bardawil Lagoon on the Mediterranean coast of Sinai. *Journal of Fish Biology*, 22(5):537–547, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1983:NGS**

- [481] N. R. Merrett, Y. I. Sazonov, and Y. N. Shcherbachev. A new genus and species of rattail fish (*Macrouridae*) from the eastern North Atlantic and eastern Indian Ocean, with notes on its ecology. *Journal of Fish Biology*, 22(5):549–561, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mollah:1983:VCC**

- [482] M. F. A. Mollah and E. S. P. Tan. Viability of catfish (*Clarias macrocephalus*, Günther) eggs fertilized at varying post-ovulation times. *Jour-*

*nal of Fish Biology*, 22(5):563–566, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Black:1983:ADS**

- [483] G. A. Black, W. L. Montgomery, and F. G. Whoriskey. Abundance and distribution of *Salmincola edwardsii* (Copepoda) on anadromous brook trout, *Salvelinus fontinalis*, (Mitchill) in the Moisie River system, Quebec. *Journal of Fish Biology*, 22(5):567–575, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:ESI**

- [484] M. Jobling and A. Wandsvik. Effect of social interactions on growth rates and conversion efficiency of Arctic charr, *Salvelinus alpinus* L. *Journal of Fish Biology*, 22(5):577–584, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatner:1983:FIU**

- [485] M. F. Tatner and M. T. Horne. Factors influencing the uptake of <sup>14</sup>C-labelled *Vibrio anguillarum* vaccine in direct immersion experiments with rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 22(5):585–591, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**OGrady:1983:ODH**

- [486] M. F. O’Grady. Observations on the dietary habits of wild and stocked brown trout, *Salmo trutta* L., in Irish lakes. *Journal of Fish Biology*, 22(5):593–601, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beck:1983:EAP**

- [487] M. L. Beck, C. J. Biggers, and H. K. Dupree. Electrophoretic analysis of protein systems of *Ctenopharyngodon idella* (Val.), *Hypophthalmichthys nobilis* (Rich.) and their F<sub>1</sub> triploid hybrid. *Journal of Fish Biology*, 22(5):603–611, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1983:RCC**

- [488] G. M. Hughes, C. Albers, D. Muster, and K. H. Götz. Respiration of the carp, *Cyprinus carpio* L., at 10 and 20°C and the effects of hypoxia. *Journal of Fish Biology*, 22(5):613–628, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRc**

- [489] Anonymous. Book reviews. *Journal of Fish Biology*, 22(5):629–630, May 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowx:1983:BBA**

- [490] I. G. Cowx. The biology of bream, *Abramis brama* (L), and its natural hybrid with roach, *Rutilus rutilus* (L), in the River Exe. *Journal of Fish Biology*, 22(6):631–646, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wolfson:1983:RSJ**

- [491] F. H. Wolfson. Records of seven juveniles of the whale shark, *Rhiniodon typus*. *Journal of Fish Biology*, 22(6):647–655, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ilan:1983:IPI**

- [492] Z. Ilan and Z. Yaron. Interference of o,p'DDD with interrenal function and cortisol metabolism in *Sarotherodon aureus* (Steindachner). *Journal of Fish Biology*, 22(6):657–669, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Porter:1983:SOS**

- [493] D. A. Porter and A. J. Fivizzani. Spontaneous occurrence of a synchronous hermaphrodite in the banded killifish, *Fundulus diaphanus* (Lesueur). *Journal of Fish Biology*, 22(6):671–675, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Quinn:1983:PWS**

- [494] T. P. Quinn, E. L. Brannon, and R. P. Whitman. Pheromones and the water source preferences of adult Coho salmon *Oncorhynchus kisutch* Walbaum. *Journal of Fish Biology*, 22(6):677–684, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shireman:1983:CGH**

- [495] J. V. Shireman, R. W. Rottmann, and F. J. Aldridge. Consumption and growth of hybrid grass carp fed four vegetation diets and trout chow in circular tanks. *Journal of Fish Biology*, 22(6):685–693, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smagula:1983:GNP**

- [496] C. M. Smagula and I. R. Adelman. Growth in a natural population of largemouth bass, *Micropterus salmoides* Lacépède, as determined by

physical measurements and [14C]-glycine uptake by scales. *Journal of Fish Biology*, 22(6):695–703, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:QPR**

- [497] M. Jobling and A. Wandsvik. Quantitative protein requirements of Arctic charr, *Salvelinus alpinus* (L). *Journal of Fish Biology*, 22(6):705–712, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1983:REV**

- [498] J. F. Craig and C. Kipling. Reproduction effort versus the environment; case histories of Windermere perch, *Perca fluviatilis* L., and pike, *Esox lucius* L. *Journal of Fish Biology*, 22(6):713–727, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRd**

- [499] Anonymous. Book reviews. *Journal of Fish Biology*, 22(6):729–731, June 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kjorsvik:1983:EEQ**

- [500] E. Kjorsvik and S. Lønning. Effects of egg quality on normal fertilization and early development of the cod, *Gadus morhua* L. *Journal of Fish Biology*, 23(1):1–12, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hjelmeland:1983:SMP**

- [501] K. Hjelmeland, M. Christie, and J. Raa. Skin mucus protease from rainbow trout, *Salmo gairdneri* Richardson, and its biological significance. *Journal of Fish Biology*, 23(1):13–22, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milton:1983:RBG**

- [502] D. A. Milton and A. H. Arthington. Reproductive biology of *Gambusia affinis holbrooki* Baird and Girard, *Xiphophorus helleri* (Günther) and *X. maculatus* (Heckel) (Pisces; Poeciliidae) in Queensland, Australia. *Journal of Fish Biology*, 23(1):23–41, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nottage:1983:GMR**

- [503] A. S. Nottage and E. J. Perkins. Growth and maturation of roker *Raja clavata* L. in the Solway Firth. *Journal of Fish Biology*, 23(1):43–48, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnson:1983:MAP**

- [504] C. R. Johnson, D. A. Ratkowsky, and R. W. G. White. Multivariate analysis of the phenotypic relationships of the species of Paragalaxias and Galaxias (Pisces: Galaxiidae) in Tasmania. *Journal of Fish Biology*, 23(1):49–63, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1983:CSS**

- [505] A. W. H. Turnpenny and R. N. Bamber. The critical swimming speed of the sand smelt (*Atherina presbyter* Cuvier) in relation to capture at a power station cooling water intake. *Journal of Fish Biology*, 23(1):65–73, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Andersson:1983:PLA**

- [506] L. Andersson, N. Ryman, and G. Ståhl. Protein loci in the Arctic charr, *Salvelinus alpinus* L.: electrophoretic expression and genetic variability patterns. *Journal of Fish Biology*, 23(1):75–94, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Storch:1983:ESS**

- [507] V. Storch and J. V. Juario. The effect of starvation and subsequent feeding on the hepatocytes of *Chanos chanos* (Forsskål) fingerlings and fry. *Journal of Fish Biology*, 23(1):95–103, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eddy:1983:ULN**

- [508] F. B. Eddy, P. A. Kunzlik, and R. N. Bath. Uptake and loss of nitrite from the blood of rainbow trout, *Salmo gairdneri* Richardson, and Atlantic salmon, *Salmo salar* L. in fresh water and in dilute sea water. *Journal of Fish Biology*, 23(1):105–116, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fuiman:1983:GGF**

- [509] L. A. Fuiman. Growth gradients in fish larvae. *Journal of Fish Biology*, 23(1):117–123, July 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sheridan:1983:SVL**

- [510] M. A. Sheridan, W. V. Allen, and T. H. Kerstetter. Seasonal variations in the lipid composition of the steelhead trout, *Salmo gairdneri* Richardson, associated with the parr-smolt transformation. *Journal of Fish Biology*,

23(2):125–134, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hirshfield:1983:IPL**

- [511] M. F. Hirshfield, R. P. Morin, and D. J. Hepner. Increased prevalence of larval *Eustrongylides* (Nematoda) in the mummichog, *Fundulus heteroclitus* (L.), from the discharge canal of a power plant in the Chesapeake Bay. *Journal of Fish Biology*, 23(2):135–142, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davison:1983:LMC**

- [512] W. Davison. The lateral musculature of the common bully, *Gobiomorphus cotidianus*, a freshwater fish from New Zealand. *Journal of Fish Biology*, 23(2):143–151, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munkittrick:1983:HVF**

- [513] K. R. Munkittrick and J. F. Leatherland. Haematocrit values in feral goldfish, *Camssius auratus* L., as indicators of the health of the population. *Journal of Fish Biology*, 23(2):153–161, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1983:ACB**

- [514] A. D. Pickering and J. Duston. Administration of cortisol to brown trout, *Salmo trutta* L., and its effects on the susceptibility to *Saprolegnia* infection and furunculosis. *Journal of Fish Biology*, 23(2):163–175, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:EFF**

- [515] M. Jobling. Effect of feeding frequency on food intake and growth of Arctic charr, *Salvelinus alpinus* L. *Journal of Fish Biology*, 23(2):177–185, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pauley:1983:IHC**

- [516] G. B. Pauley and C. M. Heartwell. Immune hypersensitivity in the channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 23(2):187–193, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weng:1983:IHS**

- [517] H. T. Weng. Identification, habitats and seasonal occurrence of juvenile whiting (Sillaginidae) in Moreton Bay, Queensland. *Journal of Fish Bi-*

*ology*, 23(2):195–200, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bamber:1983:DSS**

- [518] R. N. Bamber, R. Glover, P. A. Henderson, and A. W. H. Turnpenny. Diplostomiasis in the sand smelt, *Atherina presbyter* (Cuvier), population at Fawley Power Station. *Journal of Fish Biology*, 23(2):201–210, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Talbot:1983:RMF**

- [519] C. Talbot and P. J. Higgins. A radiographic method for feeding studies on fish using metallic iron powder as a marker. *Journal of Fish Biology*, 23(2):211–220, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ottaway:1983:IWV**

- [520] E. M. Ottaway and D. R. Forrest. The influence of water velocity on the downstream movement of alevins and fry of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 23(2):221–227, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1983:CVO**

- [521] N. W. Pankhurst and J. N. Lythgoe. Changes in vision and olfaction during sexual maturation in the European eel *Anguilla anguilla* (L.). *Journal of Fish Biology*, 23(2):229–240, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hutchinson:1983:NRO**

- [522] P. Hutchinson. A note recording the occurrence of hermaphroditic smelt, *Osmerus eperlanus* (L.) from the River Thames, England. *Journal of Fish Biology*, 23(2):241–243, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRe**

- [523] Anonymous. Book reviews. *Journal of Fish Biology*, 23(2):245–248, August 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cren:1983:O**

- [524] E. D. Le Cren. Obituary. *Journal of Fish Biology*, 23(3):249–250, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jafri:1983:MHP**

- [525] S. I. H. Jafri and D. M. Ensor. The morphology and histology of the pineal organ in roach, *Rutilus rutilus* (L.). *Journal of Fish Biology*, 23(3):251–256, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Moriarty:1983:ADG**

- [526] Christopher Moriarty. Age determination and growth rate of eels, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 23(3):257–264, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cresswell:1983:PSM**

- [527] R. C. Cresswell and R. Williams. Post- stocking movements and recapture of hatchery-reared trout released into flowing waters — effect of prior acclimation to flow. *Journal of Fish Biology*, 23(3):265–276, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hakeem:1983:BIA**

- [528] O. H. El Hakeem and M. M. Babiker. Bioassay of insulin activity of pancreatic tissue in active and aestivated African lungfish, *Protopterus annectens* (Owen). *Journal of Fish Biology*, 23(3):277–282, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Williams:1983:IFH**

- [529] R. Williams. The inshore fishes of Heard and McDonald Islands, Southern Indian Ocean. *Journal of Fish Biology*, 23(3):283–292, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bouck:1983:TGS**

- [530] G. R. Bouck and R. E. King. Tolerance to gas supersaturation in fresh water and sea water by steelhead trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 23(3):293–300, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Srivastav:1983:CRF**

- [531] A. K. Srivastav. Calcaemic responses in the freshwater mud eel, *Amphipnous cuchia*, to vitamin D<sub>3</sub> administration. *Journal of Fish Biology*, 23(3):301–303, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Morrison:1983:OFJ**

- [532] B. R. S. Morrison. Observations on the food of juvenile Atlantic salmon, *Salmo salar* L., reared in a Scottish hill loch. *Journal of Fish Biology*, 23(3):305–313, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crocker:1983:BOS**

- [533] P. A. Crocker, C. R. Arnold, J. A. DeBoer, and G. J. Holt. Blood osmolality shift in juvenile red drum, *Sciaenops ocellatus* L. exposed to fresh water. *Journal of Fish Biology*, 23(3):315–319, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1983:SPJ**

- [534] A. W. H. Turnpenny. Swimming performance of juvenile sprat, *Sprattus sprattus* L., and herring, *Clupea harengus* L., at different salinities. *Journal of Fish Biology*, 23(3):321–325, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tytler:1983:TEM**

- [535] P. Tytler and T. Vaughan. Thermal ecology of the mudskippers, *Periophthalmus koelreuteri* (Pallas) and *Boleophthalmus boddarti* (Pallas) of Kuwait Bay. *Journal of Fish Biology*, 23(3):327–337, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sagi:1983:POD**

- [536] G. Sagi, M. Abraham, and V. Hilge. Pinealectomy and ovarian development in the grey mullet, *Liza ramada*. *Journal of Fish Biology*, 23(3):339–345, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**DeSilva:1983:EDQ**

- [537] S. S. De Silva and A. A. Owoyemi. Effect of dietary quality on the gastric evacuation and intestinal passage in *Sarotherodon mossambicus* (Peters) fry. *Journal of Fish Biology*, 23(3):347–355, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rinne:1983:MFB**

- [538] J. N. Rinne and B. Wanjala. Maturity, fecundity, and breeding seasons of the major catfishes (suborder: siluroidea) in Lake Victoria, East Africa. *Journal of Fish Biology*, 23(3):357–363, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wilson:1983:SCC**

- [539] J. P. F. Wilson and T. J. Pitcher. The seasonal cycle of condition in the pollan, *Coregonus autumnalis pollan* Thompson, of Lough Neagh, Northern Ireland. *Journal of Fish Biology*, 23(3):365–370, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1983:BRf**

- [540] Anonymous. Book reviews. *Journal of Fish Biology*, 23(3):371–372, September 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Drewett:1983:PLP**

- [541] N. Drewett and P. D. Abel. Pathology of lindane poisoning and of hypoxia in the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 23(4):373–384, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ruby:1983:ITC**

- [542] S. M. Ruby and V. Cairns. Implications of testicular constrictions on spermatogenesis in Lake Ontario lake trout, *Salvelinus namaycush*. *Journal of Fish Biology*, 23(4):385–395, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:IFC**

- [543] M. Jobling and A. Wandsvik. An investigation of factors controlling food intake in Arctic charr, *Salvelinus alpinus* L. *Journal of Fish Biology*, 23(4):397–404, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blacker:1983:PRL**

- [544] R. W. Blacker. Pelagic records of the lumpsucker, *Cyclopterus lumpus* L. *Journal of Fish Biology*, 23(4):405–417, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hofsten:1983:DFL**

- [545] A. V. Hofsten, D. Kahan, R. Katznelson, and T. Bar-El. Digestion of free-living nematodes fed to fish. *Journal of Fish Biology*, 23(4):419–428, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1983:NSDb**

- [546] N. R. Merrett. A new species of the deep-sea fish genus *Paraliparis* Collett (Liparididae) from the eastern North Atlantic, with notes on its ecology. *Journal of Fish Biology*, 23(4):429–439, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Paperna:1983:PCH**

- [547] I. Paperna and J. G. Van As. The pathology of *Chilodonella hexasticha* (Kiernik). Infections in cichlid fishes. *Journal of Fish Biology*, 23(4):441–450, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Colville:1983:VRC**

- [548] T. P. Colville, R. H. Richards, and J. W. Dobbie. Variations in renal corpuscular morphology with adaptation to sea water in the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 23(4):451–456, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sakai:1983:LBP**

- [549] D. K. Sakai. Lytic and bactericidal properties of salmonid sera. *Journal of Fish Biology*, 23(4):457–466, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Geffen:1983:DOR**

- [550] A. J. Geffen. The deposition of otolith rings in Atlantic salmon, *Salmo salar* L., embryos. *Journal of Fish Biology*, 23(4):467–474, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goswami:1983:SAO**

- [551] S. V. Goswami, I. Parwez, and B. I. Sundararaj. Some aspects of osmoregulation in a stenohaline freshwater catfish, *Heteropneustes fossilis* (Bloch), in different salinities. *Journal of Fish Biology*, 23(4):475–487, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morgan:1983:SCM**

- [552] W. L. Morgan and D. A. Ritz. Sensory cues and mechanisms involved in the capture of euphausiids by the Australian salmon, *Arripis trutta* (Bloch & Schneider). *Journal of Fish Biology*, 23(4):489–493, October 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Collares-Pereira:1983:BAC**

- [553] M. J. Collares-Pereira and M. M. Coelho. Biometrical analysis of *Chondrostoma polylepis* × *Rutilus arcasi* natural hybrids (Osteichthyes — Cypriniformes — Cyprinidae). *Journal of Fish Biology*, 23(5):495–509, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Karlsson:1983:GMZ**

- [554] L. Karlsson. Gill morphology in the zebrafish, *Brachydanio rerio* (Hamilton-Buchanan). *Journal of Fish Biology*, 23(5):511–524, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rowland:1983:SAF**

- [555] S. J. Rowland. Spawning of the Australian freshwater fish Murray cod, *Maccullochella peelii* (Mitchell), in earthen ponds. *Journal of Fish Biology*, 23(5):525–534, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rogers:1983:UOM**

- [556] S. C. Rogers and A. H. Weatherley. The use of opercular muscle electromyograms as an indicator of the metabolic costs of fish activity in rainbow trout, *Salmo gairdneri* Richardson, as determined by radiotelemetry. *Journal of Fish Biology*, 23(5):535–547, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:TES**

- [557] M. Jobling. Towards an explanation of specific dynamic action (SDA). *Journal of Fish Biology*, 23(5):549–555, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davis:1983:PBA**

- [558] J. F. Davis and S. S. Hayasaka. Pathogenic bacteria associated with cultured American eels, *Anguilla rostrata* Le Sueur. *Journal of Fish Biology*, 23(5):557–564, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bucke:1983:HRS**

- [559] D. Bucke, S. W. Feist, M. G. Norton, and M. S. Rolfe. A histopathological report of some epidermal anomalies of Dover sole, *Solea solea* L., and other flatfish species in coastal waters off south-east England. *Journal*

of *Fish Biology*, 23(5):565–578, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cenini:1983:VEZ**

- [560] P. Cenini and R. J. Turner. In vitro effects of zinc on lymphoid cells of the carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 23(5):579–583, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burke:1983:SCS**

- [561] M. Burke and J. F. Leatherland. Seasonal changes in serum thyroid hormone levels of the feral brown bullhead, *Ictalurus nebulosus* Lesueur. *Journal of Fish Biology*, 23(5):585–593, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shireman:1983:GFH**

- [562] J. V. Shireman, F. J. Aldridge, and R. W. Rottmann. Growth and food habits of hybrid carp, *Ctenopharyngodon idella* × *Aristichthys nobilis*, from aerated and non-aerated ponds. *Journal of Fish Biology*, 23(5):595–604, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lacey:1983:EAL**

- [563] S. M. Lacey and I. C. Williams. *Epieimeria anguillae* (Léger & Hollande, 1922) Dyková & Lom, 1981 (Apicomplexa: Eucoccidia) in the European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 23(5):605–609, November 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Geevarghese:1983:MSG**

- [564] C. Geevarghese and P. A. John. Maturation and spawning of a gobiid fish, *Oligolepis acutipennis* (Cuv. & Val.), from the south-west coast of India. *Journal of Fish Biology*, 23(6):611–624, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Youngson:1983:ASE**

- [565] A. F. Youngson, R. J. G. Buck, T. H. Simpson, and D. W. Hay. The autumn and spring emigrations of juvenile Atlantic salmon, *Salmo salar* L., from the Girnock Burn, Aberdeenshire, Scotland: environmental release of migration. *Journal of Fish Biology*, 23(6):625–639, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fukuhara:1983:DGL**

- [566] O. Fukuhara. Development and growth of laboratory reared *Engraulis japonica* (Houttuyn) larvae. *Journal of Fish Biology*, 23(6):641–652, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1983:PLW**

- [567] A. H. Weatherley and H. S. Gill. Protein, lipid, water and caloric contents of immature rainbow trout, *Salmo gairdneri* Richardson, growing at different rates. *Journal of Fish Biology*, 23(6):653–673, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**DeSilva:1983:DAM**

- [568] S. S. De Silva and M. K. Perera. Digestibility of an aquatic macrophyte by the cichlid *Etroplus suratensis* (Bloch) with observations on the relative merits of three indigenous components as markers and daily changes in protein digestibility. *Journal of Fish Biology*, 23(6):675–684, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1983:SRC**

- [569] M. Jobling. A short review and critique of methodology used in fish growth and nutrition studies. *Journal of Fish Biology*, 23(6):685–703, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Noeske:1983:PDV**

- [570] T. A. Noeske and R. E. Spieler. Photoperiod and diel variations of serum cortisol, thyroxine and protein in goldfish, *Carassius auratus* L. *Journal of Fish Biology*, 23(6):705–710, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wedemeyer:1983:SPL**

- [571] G. A. Wedemeyer, R. W. Gould, and W. T. Yasutake. Some potentials and limits of the leucocrit test as a fish health assessment method. *Journal of Fish Biology*, 23(6):711–716, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnston:1983:ETM**

- [572] I. A. Johnston, F. B. Eddy, and G. M. O. Maloiy. The effects of temperature on muscle pH, adenylate and phosphogen concentrations

in *Oreochromis alcalicus grahami*, a fish adapted to an alkaline hot-spring. *Journal of Fish Biology*, 23(6):717–724, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lyle:1983:FFH**

- [573] J. M. Lyle. Food and feeding habits of the lesser spotted dogfish, *Scyliorhinus canicula* (L.), in Isle of Man waters. *Journal of Fish Biology*, 23(6):725–737, December 1983. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Buck:1984:RBS**

- [574] R. J. G. Buck and D. W. Hay. The relation between stock size and progeny of Atlantic salmon, *Salmo salar* L., in a Scottish stream. *Journal of Fish Biology*, 24(1):1–11, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fraser:1984:ES1a**

- [575] J. A. L. Fraser and E. R. Clark. The effects of a settled industrial-domestic sewage works effluent from percolating filters on the survival and growth of various stages of rainbow trout, *Salmo gairdneri* (Richardson). *Journal of Fish Biology*, 24(1):13–27, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Youngson:1984:CST**

- [576] A. F. Youngson and T. H. Simpson. Changes in serum thyroxine levels during smolting in captive and wild Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 24(1):29–39, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gardiner:1984:EPD**

- [577] W. R. Gardiner. Estimating population densities of salmonids in deep water in streams. *Journal of Fish Biology*, 24(1):41–49, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morgan:1984:EPD**

- [578] W. L. Morgan and D. A. Ritz. Effect of prey density and hunger state on capture of krill, *Nyctiphanes australis* Sars, by Australian salmon, *Arripis trutta* (Bloch & Schneider). *Journal of Fish Biology*, 24(1):51–58, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burton:1984:CNL**

- [579] M. P. Burton and D. R. Idler. Can Newfoundland landlocked salmon, *Salmo salar* L., adapt to sea water? *Journal of Fish Biology*, 24(1):59–64, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heccbercet:1984:ESW**

- [580] Tor G. Heccbercet. Effect of supersaturated water on fish in the River Nidelva, southern Norway. *Journal of Fish Biology*, 24(1):65–74, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munkittrick:1984:SCP**

- [581] K. R. Munkittrick and J. F. Leatherland. Seasonal changes in the pituitary- gonad axis of feral goldfish, *Carassius auratus* L., from Ontario, Canada. *Journal of Fish Biology*, 24(1):75–90, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Townshend:1984:EFS**

- [582] T. J. Townshend and R. J. Wootton. Effects of food supply on the reproduction of the convict cichlid, *Cichlasoma nigrofasciatum*. *Journal of Fish Biology*, 24(1):91–104, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Kadhomy:1984:VPG**

- [583] N. K. Al-Kadhomy. Vascular pathways in the gill filaments of the flounder, *Platichthys flesus* L. *Journal of Fish Biology*, 24(1):105–114, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bowen:1984:DHU**

- [584] S. H. Bowen. Differential habitat utilization by sexes of *Sarotherodon mossambicus* in Lake Valencia, Venezuela: significance for fitness. *Journal of Fish Biology*, 24(1):115–121, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRa**

- [585] Anonymous. Book reviews. *Journal of Fish Biology*, 24(1):123–124, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRb**

- [586] Anonymous. Books received. *Journal of Fish Biology*, 24(1):124, January 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Danulat:1984:CAD**

- [587] E. Danulat and H. Kausch. Chitinase activity in the digestive tract of the cod, *Gadus morhua* (L.). *Journal of Fish Biology*, 24(2):125–133, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1984:SFP**

- [588] C. R. Kennedy. The status of flounders, *Platichthys flesus* L., as hosts of the Acanthocephalan *Pomphorhynchus laevis* (Müller) and its survival in marine conditions. *Journal of Fish Biology*, 24(2):135–149, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wilson:1984:ADG**

- [589] J. P. F. Wilson and T. J. Pitcher. Age determination and growth of the pollan, *Coregonus autumnalis pollan* Thompson, of Lough Neagh, Northern Ireland. *Journal of Fish Biology*, 24(2):151–163, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Diana:1984:GLB**

- [590] J. S. Diana. The growth of largemouth bass, *Micropterus salmoides* (Lacépède), under constant and fluctuating temperatures. *Journal of Fish Biology*, 24(2):165–172, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mann:1984:ENE**

- [591] R. H. K. Mann and T. Penczak. The efficiency of a new electrofishing technique in determining fish numbers in a large river in Central Poland. *Journal of Fish Biology*, 24(2):173–185, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reiersen:1984:AVL**

- [592] L.-O. Reiersen and K. Fugelli. Annual variation in lymphocystis infection frequency in flounder, *Platichthys flesus* (L.). *Journal of Fish Biology*, 24(2):187–191, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Secombes:1984:IRC**

- [593] C. J. Secombes and J. W. Resink. The immune response of carp, *Cyprinus carpio* L., following injection of antigen-antibody complexes. *Journal of Fish Biology*, 24(2):193–200, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bartlett:1984:UAC**

- [594] J. R. Bartlett, P. F. Randerson, R. Williams, and D. M. Ellis. The use of analysis of covariance in the back-calculation of growth in fish. *Journal of Fish Biology*, 24(2):201–213, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Colombo:1984:GDB**

- [595] G. Colombo, G. Grandi, and R. Rossi. Gonad differentiation and body growth in *Anguilla anguilla* L. *Journal of Fish Biology*, 24(2):215–228, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kipling:1984:SOA**

- [596] C. Kipling. Some observations on autumn-spawning charr, *Salvelinus alpinus* L., in Windermere, 1939–1982. *Journal of Fish Biology*, 24(2):229–234, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bromley:1984:ICF**

- [597] P. J. Bromley and T. C. Adkins. The influence of cellulose filler on feeding, growth and utilization of protein and energy in rainbow trout, *Salmo gairdnerii* Richardson. *Journal of Fish Biology*, 24(2):235–244, February 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoffmann:1984:ERB**

- [598] R. Hoffmann and R. Lommel. Effects of repeated blood sampling on some blood parameters in freshwater fish. *Journal of Fish Biology*, 24(3):245–251, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wilson:1984:FPC**

- [599] J. P. F. Wilson. The food of the pollan, *Coregonus autumnalis pollan* Thompson, in Lough Neagh, Northern Ireland. *Journal of Fish Biology*, 24(3):253–261, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**DeWKruger:1984:SCP**

- [600] J. C. De W.Kruger, G. L. Smit, J. H. J. Van Vuren, and J. T. Ferreira. Some chemical and physical characteristics of the semen of *Cyprinus carpio* L. and *Oreochromis mossambicus* (Peters). *Journal of Fish Biology*,

24(3):263–272, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lanzing:1984:MNP**

- [601] W. J. R. Lanzing. Melanogenesis in normal and phenylthiourea-treated eggs and larvae of *Sarotherodon aureus*. *Journal of Fish Biology*, 24(3):273–280, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mauchline:1984:IPW**

- [602] J. Mauchline and J. D. M. Gordon. Incidence of parasitic worms in stomachs of pelagic and demersal fish of the Rockall Trough, northeastern Atlantic Ocean. *Journal of Fish Biology*, 24(3):281–285, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brodeur:1984:GER**

- [603] R. D. Brodeur. Gastric evacuation rates for two foods in the black rockfish, *Sebastes melanops* Girard. *Journal of Fish Biology*, 24(3):287–298, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heath:1984:CTA**

- [604] A. G. Heath. Changes in tissue adenylates and water content of bluegill, *Lepomis macrochirus*, exposed to copper. *Journal of Fish Biology*, 24(3):299–309, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kjörsvik:1984:OCD**

- [605] E. Kjörsvik, J. Davenport, and S. Lønning. Osmotic changes during the development of eggs and larvae of the lumpsucker, *Cydopterus lumpus* L. *Journal of Fish Biology*, 24(3):311–321, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Langdon:1984:RGK**

- [606] J. S. Langdon and J. E. Thorpe. Response of the gill  $\text{Na}^+\text{-K}^+\text{-ATPase}$  activity, succinic dehydrogenase activity and chloride cells to saltwater adaptation in Atlantic salmon, *Salmo salar* L., parr and smolt. *Journal of Fish Biology*, 24(3):323–331, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Benfey:1984:HTL**

- [607] T. J. Benfey and A. M. Sutterlin. The haematology of triploid landlocked Atlantic salmon, *Salmo solar* L. *Journal of Fish Biology*, 24(3):333–

338, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vuorinen:1984:RGV**

- [608] J. Vuorinen. Reduction of genetic variability in a hatchery stock of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 24(3):339–348, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRc**

- [609] Anonymous. Book reviews. *Journal of Fish Biology*, 24(3):349–350, March 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barbieri:1984:NND**

- [610] G. Barbieri and M. C. Barbieri. Note on nutritional dynamics of *Gymnotus carapo* (L.) from the Lobo Reservoir, São Paulo State, Brazil. *Journal of Fish Biology*, 24(4):351–355, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mauchline:1984:OSS**

- [611] J. Mauchline and J. D. M. Gordon. Occurrence of stones, sediment and fish scales in stomach contents of demersal fish of the Rockall Trough. *Journal of Fish Biology*, 24(4):357–362, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Conneely:1984:MPF**

- [612] J. J. Conneely and T. K. McCarthy. The metazoan parasites of freshwater fishes in the Corrib catchment area, Ireland. *Journal of Fish Biology*, 24(4):363–375, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munro:1984:ORO**

- [613] A. D. Munro. The ontogeny of the retina and optic tectum in *Aequidens portalegrensis* (Hensel). *Journal of Fish Biology*, 24(4):377–393, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kipling:1984:MRE**

- [614] C. Kipling and E. D. Le Cren. Mark-recapture experiments on fish in Windermere, 1943–1982. *Journal of Fish Biology*, 24(4):395–414, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Harcup:1984:MBT**

- [615] M. F. Harcup, R. Williams, and D. M. Ellis. Movements of brown trout, *Salmo trutta* L., in the River Gwyddon, South Wales. *Journal of Fish Biology*, 24(4):415–426, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wallace:1984:ICE**

- [616] J. C. Wallace and D. Aasjord. An investigation of the consequences of egg size for the culture of Arctic charr, *Salvelinus alpinus* (L.). *Journal of Fish Biology*, 24(4):427–435, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McEvov:1984:ORR**

- [617] L.-A. McEvov (Barton). Ovulatory rhythms and over-ripening of eggs in cultivated turbot, *Scophthalmus maximus* L. *Journal of Fish Biology*, 24(4):437–448, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chervinski:1984:STG**

- [618] J. Chervinski. Salinity tolerance of the guppy, *Poecilia reticulata* Peters. *Journal of Fish Biology*, 24(4):449–452, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodward:1984:PHG**

- [619] B. Woodward and T. Bergeron. Protein histochemistry of the granule cells in the small intestine of the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 24(4):453–458, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hudson:1984:RBS**

- [620] W. F. Hudson and F. J. Bulow. Relationships between squamation chronology of the bluegill, *Lepomis macrochims* Rafinesque, and age-growth methods. *Journal of Fish Biology*, 24(4):459–469, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agius:1984:EMS**

- [621] C. Agius and S. A. Agbede. An electron microscopical study on the genesis of lipofuscin, melanin and haemosiderin in the haemopoietic tissues of fish. *Journal of Fish Biology*, 24(4):471–488, April 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jolly:1984:ODS**

- [622] D. W. Jolly. Obituary: Dr Stanislas F. Snieszko. *Journal of Fish Biology*, 24(5):489, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cyrus:1984:RBG**

- [623] D. P. Cyrus and S. J. M. Blaber. The reproductive biology of *Gerres* in Natal estuaries. *Journal of Fish Biology*, 24(5):491–504, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lonning:1984:HPE**

- [624] S. Lönning, E. Kjörsvik, and J. Davenport. The hardening process of the egg chorion of the cod, *Gadus morhua* L., and lumpsucker, *Cyclopterus lumpus* L. *Journal of Fish Biology*, 24(5):505–522, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dickerson:1984:TPP**

- [625] H. W. Dickerson, J. Brown, D. L. Dawe, and J. B. Gratzek. *Tetrahymena pyriformis* as a protective antigen against *Ichthyophthirius multifiliis* infection: comparisons between isolates and ciliary preparations. *Journal of Fish Biology*, 24(5):523–528, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lindsay:1984:DFD**

- [626] G. J. H. Lindsay. Distribution and function of digestive tract chitinolytic enzymes in fish. *Journal of Fish Biology*, 24(5):529–536, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Palmer:1984:EEL**

- [627] C. J. Palmer and M. B. Culley. The egg and early life stages of the sandsmelt, *Atherina presbyter* Cuvier. *Journal of Fish Biology*, 24(5):537–544, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zbanyszek:1984:EWS**

- [628] R. Zbanyszek and L. S. Smith. The effect of water-soluble aromatic hydrocarbons on some haematological parameters of rainbow trout, *Salmo gairdneri* Richardson, during acute exposure. *Journal of Fish Biology*, 24(5):545–552, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sakanari:1984:ESC**

- [629] J. A. Sakanari, M. Moser, C. A. Reilly, and T. P. Yoshino. Effects of sublethal concentrations of zinc and benzene on striped bass, *Morone saxatilis* (Walbaum), infected with larval *Anisakis* nematodes. *Journal of Fish Biology*, 24(5):553–563, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hardig:1984:SVB**

- [630] J. Härdig and L. B. Höglund. Seasonal variation in blood components of reared Baltic salmon, *Salmo salar* L. *Journal of Fish Biology*, 24(5):565–579, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1984:CIG**

- [631] M. E. Scott and M. A. Robinson. Challenge infections of *Gyrodactylus bullatamdis* (Monogenea) on guppies, *Poecilia reticulata* (Peters), following treatment. *Journal of Fish Biology*, 24(5):581–586, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hightower:1984:BCF**

- [632] J. A. Hightower, L. J. McCumber, M. G. Welsh, D. S. Whatley, R. E. Hartvigsen, and M. M. Sigel. Blood cells of *Fundulus heteroclitus* (L.). *Journal of Fish Biology*, 24(5):587–598, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craik:1984:BCO**

- [633] J. C. A. Craik and S. M. Harvey. Biochemical changes occurring during final maturation of eggs of some marine and freshwater teleosts. *Journal of Fish Biology*, 24(5):599–610, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRd**

- [634] Anonymous. Book reviews. *Journal of Fish Biology*, 24(5):611–612, May 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1984:GML**

- [635] P. A. Henderson, J. W. Whitehouse, and G. H. Cartwright. The growth and mortality of larval herring, *Clupea harengus* L., in the River Blackwater Estuary, 1978–1980. *Journal of Fish Biology*, 24(6):613–622, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cochrane:1984:IFA**

- [636] K. L. Cochrane. The influence of food availability, breeding seasons and growth rate on commercial catches of *Limnothrissa miodon* (Boulenger) in Lake Kariba. *Journal of Fish Biology*, 24(6):623–635, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chang:1984:SVG**

- [637] B. D. Chang and W. Navas. Seasonal variations in growth, condition and gonads of *Dormitator latifrons* (Richardson) in the Chone River Basin, Ecuador. *Journal of Fish Biology*, 24(6):637–648, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cattan:1984:SML**

- [638] P. E. Cattan and J. Carvajal. A study of the migration of larval *Anisakis simplex* (Nematoda: Ascaridida) in the Chilean hake, *Merluccius gayi* (Guichenot). *Journal of Fish Biology*, 24(6):649–654, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Takvorian:1984:SPM**

- [639] P. M. Takvorian and A. Cali. Seasonal prevalence of the microsporidian, *Glugea stephani* (Hagenmuller), in winter flounder, *Pseudopleuronectes americanus* (Walbaum), from the New York–New Jersey Lower Bay Complex. *Journal of Fish Biology*, 24(6):655–663, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lou:1984:DGI**

- [640] Y. D. Lou and C. E. Purdom. Diploid gynogenesis induced by hydrostatic pressure in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 24(6):665–670, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pulsford:1984:PST**

- [641] A. Pulsford. Preliminary studies on trypanosomes from the dogfish, *Scyliorhinus canicula* L. *Journal of Fish Biology*, 24(6):671–682, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Soderberg:1984:HCC**

- [642] R. W. Soderberg, M. V. McGee, and C. E. Boyd. Histology of cultured channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 24(6):683–690, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Tytler:1984:TSR**

- [643] P. Tytler and F. G. T. Holliday. Temporal and spatial relationships in the movements of loch dwelling brown trout, *Salmo trutta* L., recorded by ultrasonic tracking for 24 hours. *Journal of Fish Biology*, 24(6):691–702, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bradley:1984:EAP**

- [644] T. M. Bradley and A. W. Rourke. An electrophoretic analysis of plasma proteins from juvenile *Oncorhynchus tshawytscha* (Walbaum). *Journal of Fish Biology*, 24(6):703–709, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laale:1984:PTF**

- [645] H. W. Laale. Polyembryony in teleostean fishes: double monstrosities and triplets. *Journal of Fish Biology*, 24(6):711–719, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dabrowski:1984:MUB**

- [646] K. Dabrowski, S. J. Kaushik, and P. Luquet. Metabolic utilization of body stores during the early life of whitefish, *Coregonus lavaretus* L. *Journal of Fish Biology*, 24(6):721–729, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1984:AIT**

- [647] A. D. Pickering and A. Stewart. Acclimation of the interrenal tissue of the brown trout, *Salmo trutta* L., to chronic crowding stress. *Journal of Fish Biology*, 24(6):731–740, June 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Caceci:1984:SEM**

- [648] T. Caceci. Scanning electron microscopy of goldfish, *Carassius auratus*, intestinal mucosa. *Journal of Fish Biology*, 25(1):1–12, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1984:GDW**

- [649] A. H. Weatherley and H. S. Gill. Growth dynamics of white myotomal muscle fibres in the bluntnose minnow, *Pimephales notatus* Rafinesque, and comparison with rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(1):13–24, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baumann:1984:VAW**

- [650] P. C. Baumann and S. J. Hamilton. Vertebral abnormalities in white crappies, *Pomoxis annularis* Rafinesque, from Lake Decatur, Illinois, and an investigation of possible causes. *Journal of Fish Biology*, 25(1):25–33, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ferreira:1984:UAB**

- [651] J. T. Ferreira, H. J. Schoonbee, and G. L. Smit. The uptake of the anaesthetic benzocaine hydrochloride by the gills and the skin of three freshwater fish species. *Journal of Fish Biology*, 25(1):35–41, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1984:GMZ**

- [652] J. F. Craig and J. M. Fletcher. Growth and mortality of zebra fish, *Brachydanio rerio* (Hamilton Buchanan), maintained at two temperatures and on two diets. *Journal of Fish Biology*, 25(1):43–55, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Karges:1984:DLE**

- [653] R. G. Karges and B. Woodward. Development of lamellar epithelial hyperplasia in gills of pantothenic acid-deficient rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(1):57–62, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Collins:1984:DPC**

- [654] M. R. Collins, M. J. Marshall, and C. A. Lanciani. The distribution of *Poecilancistrum caryophyllum* (Trypanorhyncha) plerocercoids in spot, *Leiostomus xanthurus* Lacépède, and spotted seatrout, *Cynoscion nebulosus* (Cuvier). *Journal of Fish Biology*, 25(1):63–68, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**MacArthur:1984:PIC**

- [655] J. I. MacArthur, T. C. Fletcher, B. J. S. Pirie, R. J. L. Davidson, and A. W. Thomson. Peritoneal inflammatory cells in plaice, *Pleuronectes platessa* L.: effects of stress and endotoxin. *Journal of Fish Biology*, 25(1):69–81, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Perry:1984:PFC**

- [656] D. M. Perry. Post-fertilization changes in the chorion of winter flounder, *Pseudopleuronectes americanus* Walbaum, eggs observed with scanning

electron microscopy. *Journal of Fish Biology*, 25(1):83–94, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatner:1984:TLA**

- [657] M. F. Tatner, C. M. Johnson, and M. T. Horne. The tissue localization of *Aeromonas salmonicida* in rainbow trout, *Salmo gairdneri* Richardson, following three methods of administration. *Journal of Fish Biology*, 25(1):95–108, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chapman:1984:VHU**

- [658] C. A. Chapman and W. C. Mackay. Versatility in habitat use by a top aquatic predator, *Esox lucius* L. *Journal of Fish Biology*, 25(1):109–115, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Humbert:1984:SEM**

- [659] W. Humbert, R. Kirsch, and M. F. Meister. Scanning electron microscopic study of the oesophageal mucous layer in the eel, *Anguilla anguilla* L. *Journal of Fish Biology*, 25(1):117–122, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pottinger:1984:EIC**

- [660] T. G. Pottinger, A. D. Pickering, and N. Blackstock. Ectoparasite induced changes in epidermal mucification of the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 25(1):123–128, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRe**

- [661] Anonymous. Book reviews. *Journal of Fish Biology*, 25(1):129, July 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ellgaard:1984:EDA**

- [662] E. G. Ellgaard and J. Y. Gilmore III. Effects of different acids on the bluegill sunfish, *Lepomis macrochirus* Rafinesque. *Journal of Fish Biology*, 25(2):133–137, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Black:1984:DPL**

- [663] G. A. Black and J. M. Fraser. Dynamics of prevalence of *Ligula intestinalis* (L.) in *Catostomus commersoni* (Lacépède). *Journal of Fish Biology*, 25(2):139–146, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chervinski:1984:STY**

- [664] J. Chervinski. Salinity tolerance of young catfish, *Clarias lazera* (Burchell). *Journal of Fish Biology*, 25(2):147–149, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Maier:1984:EDD**

- [665] K. J. Maier and R. E. Tullis. The effects of diet and digestive cycle on the gastrointestinal tract pH values in the goldfish, *Carassius auratus* L., Mozambique tilapia, *Oreochromis mossambicus* (Peters), and channel catfish, *Ictalurus punctatus* (Rafinesque). *Journal of Fish Biology*, 25(2):151–165, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tarpley:1984:CPC**

- [666] R. J. Tarpley, D. H. Lewis, J. E. Marks, and R. F. Sis. Collection and preparation of the channel catfish, *Ictalurus punctatus* Rafinesque, olfactory organ for scanning electron microscopy. *Journal of Fish Biology*, 25(2):167–171, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dabrowski:1984:ILE**

- [667] K. R. Dabrowski and D. H. Jewson. The influence of light environment on depth of visual feeding by larvae and fry of *Coregonus pollan* (Thompson) in Lough Neagh. *Journal of Fish Biology*, 25(2):173–181, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Donnelly:1984:ECC**

- [668] W. A. Donnelly and L. M. Dill. Evidence for crypsis in Coho salmon, *Oncorhynchus kisutch* (Walbaum), parr: substrate colour preference and achromatic reflectance. *Journal of Fish Biology*, 25(2):183–195, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stave:1984:FAC**

- [669] J. W. Stave, B. S. Roberson, and F. M. Hetrick. Factors affecting the chemiluminescent response of fish phagocytes. *Journal of Fish Biology*, 25(2):197–206, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gelman:1984:ESC**

- [670] A. Gelman, S. Mokady, and U. Cogan. The effect of seasonal changes on the activity of intestinal alkaline phosphatase of pike perch, *Lucioperka lucioperka* and of bream, *Abramis brama*. *Journal of Fish Biology*, 25

(2):207–212, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rossouw:1984:AGS**

- [671] G. J. Rossouw. Age and growth of the sand shark, *Rhinobatos annulatus*, in Algoa Bay, South Africa. *Journal of Fish Biology*, 25(2):213–222, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Loughna:1984:ESU**

- [672] P. T. Loughna and G. Goldspink. The effects of starvation upon protein turnover in red and white myotomal muscle of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(2):223–230, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grossman:1984:REF**

- [673] G. D. Grossman and V. DeVlaming. Reproductive ecology of female *Oligocottus snyderi* Greeley: a North American intertidal sculpin. *Journal of Fish Biology*, 25(2):231–240, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berra:1984:RAA**

- [674] T. M. Berra. Reproductive anatomy of the Australian grayling, *Prototroctes maraena* Günther. *Journal of Fish Biology*, 25(2):241–251, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Oronsaye:1984:EDC**

- [675] J. A. O. Oronsaye and A. E. Brafield. The effect of dissolved cadmium on the chloride cells of the gills of the stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 25(2):253–258, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRf**

- [676] Anonymous. Book reviews. *Journal of Fish Biology*, 25(2):259–260, August 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sorensen:1984:IMO**

- [677] P. W. Sorensen and H. E. Winn. The induction of maturation and ovulation in American eels, *Anguilla rostrata* (LeSueur), and the relevance of chemical and visual cues to male spawning behaviour. *Journal of*

*Fish Biology*, 25(3):261–268, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cassani:1984:MCD**

- [678] J. R. Cassani, W. E. Caton, and B. Clark. Morphological comparisons of diploid and triploid hybrid grass carp, *Ctenopharyngodon idella* [female sign]× *Hypophthalmichthys nobilis* [male sign]. *Journal of Fish Biology*, 25(3):269–278, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hart:1984:CPC**

- [679] P. J. B. Hart and B. Connellan. Cost of prey capture, growth rate and ration size in pike, *Esox lucius* L., as functions of prey weight. *Journal of Fish Biology*, 25(3):279–292, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craik:1984:BMD**

- [680] J. C. A. Craik and S. M. Harvey. A biochemical method for distinguishing between the sexes of fishes by the presence of yolk protein in the blood. *Journal of Fish Biology*, 25(3):293–303, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Halvorsen:1984:EIB**

- [681] O. Halvorsen and K. Andersen. The ecological interaction between Arctic charr, *Salvelinus alpinus* (L.), and the plerocercoid stage of *Diphyllobothrium ditremum*. *Journal of Fish Biology*, 25(3):305–316, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whitear:1984:SSS**

- [682] M. Whitear and A. K. Mittal. Surface secretions of the skin of *Blennius (Lipophrys) pholis* L. *Journal of Fish Biology*, 25(3):317–331, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Somasundaram:1984:SME**

- [683] B. Somasundaram, P. E. King, and S. E. Shackley. Some morphological effects of zinc upon the yolk-sac larvae of *Clupea harengus* L. *Journal of Fish Biology*, 25(3):333–343, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lou:1984:PIH**

- [684] Y. D. Lou and C. E. Purdom. Polyploidy induced by hydrostatic pressure in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biol-*

ogy, 25(3):345–351, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pulsford:1984:SST**

- [685] A. Pulsford, W. J. W. Morrow, and R. Fänge. Structural studies on the thymus of the dogfish, *Scyliorhinus canicula* L. *Journal of Fish Biology*, 25(3):353–360, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pool:1984:SEM**

- [686] D. Pool. A scanning electron microscope study of the life cycle of *Bothriocephalus acheilognathi* Yamaguti, 1934. *Journal of Fish Biology*, 25(3):361–364, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wechsler:1984:FHA**

- [687] S. J. Wechsler. Fish health assessment: a preliminary report on the use of impression smears of skin mucus. *Journal of Fish Biology*, 25(3):365–370, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Watson:1984:EAF**

- [688] D. J. Watson and E. K. Balon. Ecomorphological analysis of fish taxocenes in rainforest streams of northern Borneo. *Journal of Fish Biology*, 25(3):371–384, September 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lincoln:1984:SMT**

- [689] R. F. Lincoln and A. P. Scott. Sexual maturation in triploid rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(4):385–392, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fraser:1984:ES1b**

- [690] J. A. L. Fraser and E. R. Clark. The effects of a settled industrial domestic sewage works effluent from percolating filters on the embryo viability and hatching success of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(4):393–403, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Walsh:1984:RUC**

- [691] G. Walsh and G. J. FitzGerald. Resource utilization and coexistence of three species of sticklebacks (Gasterosteidae) in tidal salt-marsh pools.

*Journal of Fish Biology*, 25(4):405–420, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hay:1984:WLC**

- [692] D. E. Hay. Weight loss and change of condition factor during fixation of Pacific herring, *Clupea harengus pallasii*, eggs and larvae. *Journal of Fish Biology*, 25(4):421–433, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fletcher:1984:ERS**

- [693] D. J. Fletcher, D. J. Grove, R. A. Basimi, and A. Ghaddaf. Emptying rates of single and double meals of different food quality from the stomach of the dab, *Limanda limanda* (L.). *Journal of Fish Biology*, 25(4):435–444, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Felts:1984:ITS**

- [694] P. A. Felts and A. G. Heath. Interactions of temperature and sublethal environmental copper exposure on the energy metabolism of bluegill, *Lepomis macrochirus* Rafinesque. *Journal of Fish Biology*, 25(4):445–453, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Feminella:1984:IDT**

- [695] J. W. Feminella and W. J. Matthews. Intraspecific differences in thermal tolerance of *Etheostoma spectabile* (Agassiz) in constant versus fluctuating environments. *Journal of Fish Biology*, 25(4):455–461, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Adedire:1984:SIW**

- [696] C. O. Adedire and S. O. Oduleye. Stress-induced water permeability changes in the tropical cichlid, *Oreochromis niloticus* (Trewavas). *Journal of Fish Biology*, 25(4):463–471, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aho:1984:SPD**

- [697] J. M. Aho and C. R. Kennedy. Seasonal population dynamics of the nematode *Cystidicoloides tenuissima* (Zeder) from the River Swincombe, England. *Journal of Fish Biology*, 25(4):473–489, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Gill:1984:PLC**

- [698] H. S. Gill and A. H. Weatherley. Protein, lipid and caloric contents of bluntnose minnow, *Pimephales notatus* Rafinesque, during growth at different temperatures. *Journal of Fish Biology*, 25(4):491–500, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kwain:1984:SSJ**

- [699] W. Kwain, R. W. McCauley, and J. A. MacLean. Susceptibility of starved, juvenile smallmouth bass, *Micropterus dolomieu* (Lacépède) to low pH. *Journal of Fish Biology*, 25(4):501–504, October 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chambers:1984:NNS**

- [700] J. Chambers. A new *Nothobranchius* species (Teleostei, Cyprinodontiformes, Aplocheilidae) from the Sudan. *Journal of Fish Biology*, 25(5):505–513, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Abu-Hakima:1984:SAR**

- [701] R. Abu-Hakima. Some aspects of the reproductive biology of *Acanthopagrus* spp. (family: Sparidae). *Journal of Fish Biology*, 25(5):515–526, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chubb:1984:RBE**

- [702] C. F. Chubb and I. C. Potter. The reproductive biology and estuarine movements of the gizzard shad, *Nematalosa vlaminghi* (Munro). *Journal of Fish Biology*, 25(5):527–543, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bauer:1984:SIP**

- [703] O. N. Bauer. Soviet investigations on the population biology of fish parasites. *Journal of Fish Biology*, 25(5):545–550, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Talbot:1984:EPP**

- [704] C. Talbot, P. J. Higgins, and A. M. Shanks. Effects of pre- and post-prandial starvation on meal size and evacuation rate of juvenile Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 25(5):551–560, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Street:1984:EIS**

- [705] N. E. Street, A. E. Magurran, and T. J. Pitcher. The effects of increasing shoal size on handling time in goldfish, *Carassius auratus* L. *Journal of Fish Biology*, 25(5):561–566, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wells:1984:RSF**

- [706] R. M. G. Wells, V. Tetens, and A. L. Devries. Recovery from stress following capture and anaesthesia of Antarctic fish: haematology and blood chemistry. *Journal of Fish Biology*, 25(5):567–576, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lewis:1984:EEU**

- [707] A. E. Lewis and W. R. A. Muntz. The effects of external ultrasonic tagging on the swimming performance of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(5):577–585, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spoor:1984:ORL**

- [708] W. A. Spoor. Oxygen requirements of larvae of the smallmouth bass, *Micropterus dolomieu* Lacépède. *Journal of Fish Biology*, 25(5):587–592, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burton:1984:ECP**

- [709] D. Burton, M. P. Burton, and D. R. Idler. Epidermal condition in post-spawned winter flounder, *Pseudopleuronectes americanus* (Walbaum), maintained in the laboratory and after exposure to crude petroleum. *Journal of Fish Biology*, 25(5):593–606, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beaumont:1984:AGD**

- [710] W. R. C. Beaumont and R. H. K. Mann. The age, growth and diet of a freshwater population of the flounder, *Platichthys flesus* (L.), in southern England. *Journal of Fish Biology*, 25(5):607–616, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hansen:1984:MWH**

- [711] L. P. Hansen, B. Jonsson, and K. B. Døving. Migration of wild and hatchery reared smolts of Atlantic salmon, *Salmo salar* L., through lakes. *Journal of Fish Biology*, 25(5):617–623, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:BRg**

- [712] Anonymous. Book reviews. *Journal of Fish Biology*, 25(5):625–627, November 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fletcher:1984:PGP**

- [713] D. J. Fletcher. Plasma glucose and plasma fatty acid levels of *Limanda limanda* (L.) in relation to season, stress, glucose loads and nutritional state. *Journal of Fish Biology*, 25(6):629–648, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dobson:1984:CGR**

- [714] S. H. Dobson and R. M. Holmes. Compensatory growth in the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 25(6):649–656, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mavares:1984:BAM**

- [715] R. N. Mavares and J. E. Pérez. Blood adaptations to marine and freshwater environments in fish of the family *Sciaenidae* (Perciformes). *Journal of Fish Biology*, 25(6):657–663, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1984:DDP**

- [716] C. R. Kennedy. The dynamics of a declining population of the acanthocephalan *Acanthocephalus clavula* in eels *Anguilla anguilla* in a small river. *Journal of Fish Biology*, 25(6):665–677, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marcus:1984:SAR**

- [717] O. Marcus and K. Kusemiju. Some aspects of the reproductive biology of the clupeid *Ilisha africana* (Bloch) off the Lagos Coast, Nigeria. *Journal of Fish Biology*, 25(6):679–689, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Secombes:1984:ASA**

- [718] C. J. Secombes, A. E. Lewis, L. M. Laird, E. A. Needham, and I. G. Priede. Agglutination of spermatozoa by autoantibodies in the rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 25(6):691–696, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rogers:1984:AUT**

- [719] S. C. Rogers, D. W. Church, A. H. Weatherley, and D. G. Pincock. An automated ultrasonic telemetry system for the assessment of locomotor activity in free-ranging rainbow trout, *Salmo gairdneri*, Richardson. *Journal of Fish Biology*, 25(6):697–710, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thomas:1984:ISE**

- [720] P. Thomas. Influence of some environmental variables on the ascorbic acid status of mullet, *Mugil cephalus* L., tissues. I. Effect of salinity, capture-stress, and temperature. *Journal of Fish Biology*, 25(6):711–720, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Penczak:1984:FPO**

- [721] T. Penczak and M. Moliński. Fish production in oued sebaou, a seasonal river in North Algeria. *Journal of Fish Biology*, 25(6):723–732, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Taylor:1984:EFA**

- [722] W. W. Taylor and M. H. Freeberg. Effect of food abundance on larval lake whitefish, *Coregonus clupeaformis* Mitchill, growth and survival. *Journal of Fish Biology*, 25(6):733–741, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1984:CE**

- [723] Anonymous. Change of Editor. *Journal of Fish Biology*, 25(6):743, December 1984. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Edwards:1985:GRL**

- [724] R. R. C. Edwards. Growth rates of *Lutjanidae* (snappers) in tropical Australian waters. *Journal of Fish Biology*, 26(1):1–4, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Sabti:1985:CSB**

- [725] Kabil Al-Sabti. Chromosomal studies by blood leukocyte culture technique on three salmonids from Yugoslavian waters. *Journal of Fish Biology*, 26(1):5–12, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Sabti:1985:FCA**

- [726] Kabil Al-Sabti. Frequency of chromosomal aberrations in the rainbow trout, *Salmo gairdneri* Rich., exposed to five pollutants. *Journal of Fish Biology*, 26(1):13–19, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Britz:1985:ODC**

- [727] J. Britz, J. G. Van As, and J. E. Saayman. Occurrence and distribution of *Clinostomum tilapiae* Ukoli, 1966 and *Euclinostomum heterostomum* (Rudolphi, 1809) metacercarial infections of freshwater fish in Venda and Lebowa, southern Africa. *Journal of Fish Biology*, 26(1):21–28, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clarke:1985:APA**

- [728] W. C. Clarke, H. Lundqvist, and L.-O. Eriksson. Accelerated photoperiod advances seasonal cycle of sea water adaptation in juvenile Baltic salmon, *Salmo salar* L. *Journal of Fish Biology*, 26(1):29–35, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Haraldstad:1985:DES**

- [729] Ø. Haraldstad, L. A. Vøllestad, and B. Jonsson. Descent of European silver eels, *Anguilla anguilla* L., in a Norwegian watercourse. *Journal of Fish Biology*, 26(1):37–41, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Korwin-Kossakowski:1985:ETS**

- [730] M. Korwin-Kossakowski and B. Jezierska. The effect of temperature on survival of carp fry, *Cyprinus carpio* L., in acidic water. *Journal of Fish Biology*, 26(1):43–47, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Maitipe:1985:SBZ**

- [731] P. Maitipe and S. S. De Silva. Switches between zoophagy, phytophagy and detritivory of *Sarotherodon mossambicus* (Peters) populations in twelve man-made Sri Lankan lakes. *Journal of Fish Biology*, 26(1):49–61, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McEvoy:1985:DOC**

- [732] L.-A. McEvoy. Double ovulatory cycles in some captive turbot, *Scophthalmus maximus* L. *Journal of Fish Biology*, 26(1):63–66, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1985:DMN**

- [733] A. D. Woodhead, E.-H. Cao, and T. Melgar. Distribution of N-methyl-N-nitrosourea in the Amazon molly, *Poecilia formosa* (Girard), after a single intraperitoneal injection\*. *Journal of Fish Biology*, 26(1):67–75, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weber:1985:EMT**

- [734] G. M. Weber and Cheng-Sheng Lee. Effects of  $17\alpha$ -methyl-testosterone on spermatogenesis and spermiation in the grey mullet, *Mugil cephalus* L. *Journal of Fish Biology*, 26(1):77–84, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:CEa**

- [735] Anonymous. Change of Editor. *Journal of Fish Biology*, 26(1):85, January 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Macintosh:1985:HSR**

- [736] D. J. Macintosh, T. J. Varghese, and G. P. Rao Satyanarayana. Hormonal sex reversal of wild-spawned tilapia in India. *Journal of Fish Biology*, 26(2):87–94, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hulta:1985:GDB**

- [737] G. Hulta, G. Wohlfarth, and R. Moav. Genetic differences between the Chinese and European races of the common carp, *Cyprinus carpio* L. IV. Effects of sexual maturation on growth patterns. *Journal of Fish Biology*, 26(2):95–103, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davis:1985:OPA**

- [738] Peter Davis and Alwyne Wheeler. The occurrence of *Pampus argenteus* (Euphrasen, 1788), (Osteichthyes, Perciformes, Stromateoidei, Stromateidae) in the North Sea. *Journal of Fish Biology*, 26(2):105–109, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Adams:1985:ELB**

- [739] S. M. Adams and R. B. McLean. Estimation of largemouth bass, *Micropterus salmoides* Lacépède, growth using the liver somatic index and

physiological variables. *Journal of Fish Biology*, 26(2):111–126, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Soofiani:1985:AMS**

- [740] N. M. Soofiani and I. G. Priede. Aerobic metabolic scope and swimming performance in juvenile cod, *Gadus morhua* L. *Journal of Fish Biology*, 26(2):127–138, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bolle:1985:CTS**

- [741] L. D. La Bolle, Jr., H. W. Li, and B. C. Mundy. Comparison of two samplers for quantitatively collecting larval fishes in upper littoral habitats. *Journal of Fish Biology*, 26(2):139–146, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miles:1985:RXR**

- [742] M. S. Miles, C. Talbot, and J. E. Thorpe. Reading X-ray microtags. *Journal of Fish Biology*, 26(2):147–151, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Higgins:1985:XRM**

- [743] P. J. Higgins. X-ray microtags for identification of individuals in studies of fish energetics. *Journal of Fish Biology*, 26(2):153–159, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nordlie:1985:ORS**

- [744] Frank G. Nordlie. Osmotic regulation in the Sheepshead Minnow *Cyprinodon variegatus* Lacépède. *Journal of Fish Biology*, 26(2):161–170, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kaushik:1985:ESS**

- [745] S. J. Kaushik, K. Dabrowski, and P. Luquet. Experimental studies on some trophic relationships in juvenile pike, *Esox lucius* L. *Journal of Fish Biology*, 26(2):171–180, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bell:1985:EDP**

- [746] M. V. Bell, R. J. Henderson, B. J. S. Pirie, and J. R. Sargent. Effects of dietary polyunsaturated fatty acid deficiencies on mortality, growth and gill structure in the turbot, *Scophthalmus maximus*. *Journal of Fish Biology*, 26(2):181–191, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lund:1985:ART**

- [747] M. Lund and T. G. Heggberget. Avoidance response of two-year-old rainbow trout, *Salmo gairdneri* Richardson, to air-supersaturated water: hydrostatic compensation. *Journal of Fish Biology*, 26(2):193–200, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1985:DSB**

- [748] A. D. Pickering, A. J. Strong, and J. Pollard. Differences in the susceptibility of brown trout, *Salmo trutta* L., and American brook trout, *Salvelinus fontinalis* (Mitchill), to infestation by the peritrich ciliate, *Scyphidia* sp. *Journal of Fish Biology*, 26(2):201–208, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1985:PIC**

- [749] P. C. Blaxhall and P. R. Sheard. Preliminary investigation of the characteristics of fish lymphocytes separated on a Percoll discontinuous gradient. *Journal of Fish Biology*, 26(2):209–216, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ng:1985:PDO**

- [750] T. B. Ng, P. P. L. Tam, and N. Y. S. Woo. A pharmacological dose of 17  $\beta$ -oestradiol produces minimal metabolic stimulation but evokes hepatic necrosis in the immature female serranid *Epinephelus akaara*. *Journal of Fish Biology*, 26(2):217–222, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bamber:1985:DSS**

- [751] R. N. Bamber and P. A. Henderson. Diplostomiasis in sand smelt, *Atherina presbyter* Cuvier, from the Fleet, Dorset and its use as a population indicator. *Journal of Fish Biology*, 26(2):223–229, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:BRa**

- [752] Anonymous. Book reviews. *Journal of Fish Biology*, 26(2):231–235, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:CEb**

- [753] Anonymous. Change of Editor. *Journal of Fish Biology*, 26(2):237, February 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Medved:1985:GES**

- [754] R. J. Medved. Gastric evacuation in the sandbar shark, *Carcharhinus plumbeus*. *Journal of Fish Biology*, 26(3):239–253, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lindsay:1985:CEB**

- [755] G. J. H. Lindsay and G. W. Gooday. Chitinolytic enzymes and the bacterial microflora in the digestive tract of cod, *Gadus morhua*. *Journal of Fish Biology*, 26(3):255–265, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rivlin:1985:SMP**

- [756] K. Rivlin, J. W. Rachlin, and G. Dale. A simple method for the preparation of fish chromosomes applicable to field work, teaching and banding. *Journal of Fish Biology*, 26(3):267–272, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Young:1985:SRH**

- [757] P. C. Young and R. B. Martin. Sex ratios and hermaphroditism in nemipterid fish from northern Australia. *Journal of Fish Biology*, 26(3):273–287, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matallanas:1985:FRN**

- [758] J. Matallanas. First record of the North Atlantic Morid fish, *Laemonema latifrons* Holt & Byrne, 1908, in the Mediterranean. *Journal of Fish Biology*, 26(3):289–290, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Birks:1985:MTJ**

- [759] E. K. Birks, R. D. Ewing, and A. R. Hemmingsen. Migration tendency in juvenile steelhead trout, *Salmo gairdneri* Richardson, injected with thyroxine and thiourea. *Journal of Fish Biology*, 26(3):291–300, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pollock:1985:RCY**

- [760] B. R. Pollock. The reproductive cycle of yellowfin bream, *Acanthopagms australis* (Günther), with particular reference to protandrous sex inversion. *Journal of Fish Biology*, 26(3):301–311, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sparholt:1985:PSG**

- [761] H. Sparholt. The population, survival, growth, reproduction and food of Arctic charr, *Salvelinus alpinus* (L.), in four unexploited lakes in Greenland. *Journal of Fish Biology*, 26(3):313–330, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saclauso:1985:IGS**

- [762] C. A. Saclauso. Interaction of growth with social behaviour in *Tilapia zilli* raised in three different temperatures. *Journal of Fish Biology*, 26(3):331–337, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grove:1985:GER**

- [763] D. J. Grove, M. A. Moctezuma, H. R. J. Flett, J. S. Foott, T. Watson, and M. W. Flowerdew. Gastric emptying and the return of appetite in juvenile turbot, *Scophthalmus maximus* L., fed on artificial diets. *Journal of Fish Biology*, 26(3):339–354, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lewis:1985:DIS**

- [764] D. H. Lewis, R. J. Tarpley, J. E. Marks, and R. F. Sis. Drug induced structural changes in olfactory organ of channel catfish *Ictalurus punctatus*, Rafinesque. *Journal of Fish Biology*, 26(3):355–358, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Twomey:1985:NRT**

- [765] E. Twomey and P. Byrne. A new record for the tarpon, *Tarpon atlanticus* Valenciennes (Osteichthyes-Elopiformes-Elopidae), in the eastern North Atlantic. *Journal of Fish Biology*, 26(3):359–362, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skurdal:1985:ITN**

- [766] J. Skurdal and R. Andersen. Influence of temperature on number of circuli of first year scales of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 26(3):363–366, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eliassen:1985:FRG**

- [767] J-E. Eliassen and M. Jobling. Food of the roughhead grenadier, *Macrourus berglax*, lacépède in North Norwegian waters. *Journal of Fish Biology*, 26(3):367–376, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:BRb**

- [768] Anonymous. Book reviews. *Journal of Fish Biology*, 26(3):377–380, March 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Narayan:1985:HPG**

- [769] A. Narayan, K. C. George, and A. D. Diwan. Histology of the pituitary gland of the grey mullet, *Mugil cephalus* L. *Journal of Fish Biology*, 26(4):381–390, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Larsson:1985:PMS**

- [770] P.-O. Larsson. Predation on migrating smolt as a regulating factor in Baltic salmon, *Salmo salar* L., populations. *Journal of Fish Biology*, 26(4):391–397, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Romand:1985:FBA**

- [771] R. Romand. Feeding biology of *Aplocheilichthys normani*, Ahl, a small Cyprinodontidae from West Africa. *Journal of Fish Biology*, 26(4):399–410, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gunn:1985:FFH**

- [772] J. S. Gunn and N. E. Milward. The food, feeding habits and feeding structures of the whiting species *Sillago sihama* (Forsskål) and *Sillago analis* Whitley from Townsville, North Queensland, Australia. *Journal of Fish Biology*, 26(4):411–427, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ruglys:1985:SIR**

- [773] M. P. Ruglys. The secondary immune response of young carp, *Cyprinus carpio* L., following injection of cortisol. *Journal of Fish Biology*, 26(4):429–434, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodward:1985:ETS**

- [774] J. J. Woodward and L. S. Smith. Exercise training and the stress response in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 26(4):435–447, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1985:FAG**

- [775] B. A. Henderson. Factors affecting growth and recruitment of yellow perch, *Perca flavescens* Mitchill, in South Bay, Lake Huron. *Journal of Fish Biology*, 26(4):449–458, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bedawi:1985:RCP**

- [776] R. M. Bedawi. Recruitment control and production of market-size *Oreochromis niloticus* with the predator *Lates niloticus* L. in the Sudan. *Journal of Fish Biology*, 26(4):459–464, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatakis:1985:TAS**

- [777] T. A. Tatakis and R. G. Hart. Thermal acclimation in selected tissues of the fathead minnow, *Pimephales promelas* Rafinesque. *Journal of Fish Biology*, 26(4):465–473, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dick:1985:CCB**

- [778] P. T. Dick and D. G. Dixon. Changes in circulating blood cell levels of rainbow trout, *Salmo gairdneri* Richardson, following acute and chronic exposure to copper. *Journal of Fish Biology*, 26(4):475–481, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Secombes:1985:LTE**

- [779] C. J. Secombes, E. A. Needham, L. M. Laird, A. E. Lewis, and I. G. Priede. The long-term effects of auto-immunologically induced granulomas on the testes of rainbowtrout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 26(4):483–489, April 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Liley:1985:ISB**

- [780] N. R. Liley and E. S. P. Tan. The induction of spawning behaviour in *Puntius gonionotus* (Bleeker) by treatment with prostaglandin  $\text{PGF}_{2\alpha}$ . *Journal of Fish Biology*, 26(5):491–502, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spataru:1985:FCF**

- [781] P. Spataru and M. Gophen. Food composition and feeding habits of *Astatotilapia flavijosephi* (Lortet) in Lake Kinneret (Israel). *Journal of Fish Biology*, 26(5):503–507, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Price:1985:GSR**

- [782] D. J. Price. Genetics of susceptibility and resistance to disease in fishes. *Journal of Fish Biology*, 26(5):509–519, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vollestad:1985:ADG**

- [783] L. A. Vøllestad. Age determination and growth of yellow eels, *Anguilla anguilla* (L.), from a brackish water, Norway. *Journal of Fish Biology*, 26(5):521–525, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mauchline:1985:TDD**

- [784] J. Mauchline and J. D. M. Gordon. Trophic diversity in deep-sea fish. *Journal of Fish Biology*, 26(5):527–535, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berg:1985:ADE**

- [785] R. Berg. Age determination of eels, *Anguilla anguilla* (L): comparison of field data with otolith ring patterns. *Journal of Fish Biology*, 26(5):537–544, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Basimi:1985:GER**

- [786] R. A. Basimi and D. J. Grove. Gastric emptying rate in *Pleuronectes platessa* L. *Journal of Fish Biology*, 26(5):545–552, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hansen:1985:FAS**

- [787] L. P. Hansen and P. Pethon. The food of Atlantic salmon, *Salmo salar* L., caught by long-line in northern Norwegian waters. *Journal of Fish Biology*, 26(5):553–562, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Opuszynski:1985:ICG**

- [788] K. Opuszynski, J. V. Shireman, F. J. Aldridge, and R. Rottmann. Intensive culture of grass carp and hybrid grass carp larvae. *Journal of Fish Biology*, 26(5):563–573, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hartley:1985:CTF**

- [789] S. E. Hartley and M. T. Horne. Cytogenetic techniques in fish genetics. *Journal of Fish Biology*, 26(5):575–582, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wahbeh:1985:RBG**

- [790] M. I. Wahbeh and A. Ajiad. Reproductive biology and growth of the goatfish, *Parupeneus barberinus* (Lacépède), in Aqaba, Jordan. *Journal of Fish Biology*, 26(5):583–590, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**King:1985:MMD**

- [791] D. P. F. King. Morphological and meristic differences among spawning aggregations of north-east Atlantic herring, *Clupea harengus* L. *Journal of Fish Biology*, 26(5):591–607, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kadmon:1985:SGE**

- [792] G. Kadmon, Z. Yaron, and H. Gordin. Sequence of gonadal events and oestradiol levels in *Sparus aurata* (L.) under two photoperiod regimes. *Journal of Fish Biology*, 26(5):609–620, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mann:1985:AAD**

- [793] R. H. K. Mann and B. Steinmetz. On the accuracy of age-determination using scales from rudd, *Scardinius erythrophthalmus* (L.), of known age. *Journal of Fish Biology*, 26(5):621–628, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Neave:1985:DLR**

- [794] D. A. Neave. The dorsal light reactions of larval and metamorphosing flatfish. *Journal of Fish Biology*, 26(5):629–640, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:BRc**

- [795] Anonymous. Book reviews. *Journal of Fish Biology*, 26(5):641–646, May 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miyazaki:1985:HBB**

- [796] T. Miyazaki, J. A. Plumb, Y. P. Li, and R. T. Lovell. Histopathology of broken-back syndrome in channel catfish. *Journal of Fish Biology*,

26(6):647–655, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tan:1985:HSB**

- [797] J. D. Tan. A histological study of the hypophysial-gonadal system during sexual maturation and spawning in the milkfish, *Chanos chanos* (Forsskål). *Journal of Fish Biology*, 26(6):657–668, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davis:1985:FBL**

- [798] T. L. O. Davis. The food of barramundi, *Lates calcarifer* (Bloch), in coastal and inland waters of Van Diemen Gulf and the Gulf of Carpentaria, Australia. *Journal of Fish Biology*, 26(6):669–682, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hofer:1985:DPD**

- [799] R. Hofer and A. Nasir Uddin. Digestive processes during the development of the roach, *Rutilus rutilus* L. *Journal of Fish Biology*, 26(6):683–689, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gyllensten:1985:GSF**

- [800] U. Gyllensten. The genetic structure of fish: differences in the intraspecific distribution of biochemical genetic variation between marine, anadromous, and freshwater species. *Journal of Fish Biology*, 26(6):691–699, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**OGrady:1985:CPC**

- [801] K. T. O’Grady and P. B. Spillett. A comparison of the pond culture of carp, *Cyprinus carpio* L., in Britain and mainland Europe. *Journal of Fish Biology*, 26(6):701–714, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Buddington:1985:DSL**

- [802] R. K. Buddington. Digestive secretions of lake sturgeon, *Acipenser fulvescens*, during early development. *Journal of Fish Biology*, 26(6):715–723, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Railo:1985:ESB**

- [803] E. Railo, M. Nikinmaa, and A. Soivio. Effects of sampling on blood parameters in the rainbow trout, *Salmo gairdneri* Richardson. *Journal*

of *Fish Biology*, 26(6):725–732, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heap:1985:CTC**

- [804] S. P. Heap, P. W. Watt, and G. Goldspink. Consequences of thermal change on the myofibrillar ATPase of five freshwater teleosts. *Journal of Fish Biology*, 26(6):733–738, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Speed:1985:FPR**

- [805] P. Speed and G. B. Pauley. Feasibility of protecting rainbow trout, *Salmo gairdneri* Richardson, by immunizing against the eye fluke, *Diplostomum spathaceum*. *Journal of Fish Biology*, 26(6):739–744, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pottinger:1985:CSS**

- [806] T. G. Pottinger and A. D. Pickering. Changes in skin structure associated with elevated androgen levels in maturing male brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 26(6):745–753, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**White:1985:SCS**

- [807] A. White and T. C. Fletcher. Seasonal changes in serum glucose and condition of the plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 26(6):755–764, June 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McLean:1985:TSD**

- [808] R. B. McLean, J. S. Griffith, and M. V. McGee. Threadfin shad, *Dorosoma petenense* Günther, mortality: causes and ecological implications in a South-eastern United States reservoir. *Journal of Fish Biology*, 27(1):1–12, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Edwards:1985:GMA**

- [809] R. R. C. Edwards, A. Bakhader, and S. Shaher. Growth, mortality, age composition and fisheries yields of fish from the Gulf of Aden. *Journal of Fish Biology*, 27(1):13–21, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grant:1985:BGS**

- [810] W. S. Grant. Biochemical genetic stock structure of the southern African anchovy, *Engraulis capensis* Gilchrist. *Journal of Fish Biology*, 27(1):



23–29, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stoker:1985:PGL**

- [811] P. W. Stoker, J. R. Larsen, G. M. Booth, and M. L. Lee. Pathology of gill and liver tissues from two genera of fishes exposed to two coal-derived materials. *Journal of Fish Biology*, 27(1):31–46, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thomas:1985:ISE**

- [812] P. Thomas, M. B. Bally, and J. M. Neff. Influence of some environmental variables on the ascorbic acid status of mullet, *Mugil cephalus* L., tissues: II. Seasonal fluctuations and biosynthetic ability. *Journal of Fish Biology*, 27(1):47–57, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Andrews:1985:RLK**

- [813] M. J. Andrews and Alwyne Wheeler. Rare and little-known fishes in the Thames Estuary. *Journal of Fish Biology*, 27(1):59–71, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Purdom:1985:GER**

- [814] C. E. Purdom, D. Thompson, and Y. D. Lou. Genetic engineering in rainbow trout, *Salmo gairdnerii* Richardson, by the suppression of meiotic and mitotic metaphase. *Journal of Fish Biology*, 27(1):73–79, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Karlsson-Norrgren:1985:CIC**

- [815] L. Karlsson-Norrgren, P. Runn, C. Haux, and L. Förlin. Cadmium-induced changes in gill morphology of zebrafish, *Brachydanio rerio* (Hamilton-Buchanan), and rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 27(1):81–95, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shieh:1985:VAS**

- [816] H. S. Shieh. Vaccination of Atlantic salmon, *Salmo salar* L., against furunculosis with protease of an avirulent strain of *Aeromonas salmonicida*. *Journal of Fish Biology*, 27(1):97–101, July 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bitterlich:1985:DEP**

- [817] G. Bitterlich. Digestive enzyme pattern of two stomachless filter feeders, silver carp, *Hypophthalmichthys molitrix* Val., and bighead carp, *Aris-*

*tichthys nobilis* Rich. *Journal of Fish Biology*, 27(2):103–112, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Northcote:1985:LRM**

- [818] T. G. Northcote and F. J. Ward. Lake resident and migratory smelt, *Retropinna retropinna* (Richardson), of the lower Waikato River system, New Zealand. *Journal of Fish Biology*, 27(2):113–129, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Erickson:1985:OCT**

- [819] D. L. Erickson, M. J. Harris, and G. D. Grossman. Ovarian cycling of tilefish, *Lopholatilus chamaeleonticeps* Goode and Bean, from the South Atlantic Bight, U.S.A. *Journal of Fish Biology*, 27(2):131–146, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wahbeh:1985:FFH**

- [820] M. I. Wahbeh and A. Ajiad. The food and feeding habits of the goatfish, *Parupeneus barberinus* (Lacépède), from Aqaba, Jordan. *Journal of Fish Biology*, 27(2):147–154, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eccles:1985:ETM**

- [821] D. H. Eccles. The effect of temperature and mass on routine oxygen consumption in the South African cyprinid fish *Barbus aeneus* Burchell. *Journal of Fish Biology*, 27(2):155–165, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blazer:1985:PAE**

- [822] V. S. Blazer, E. B. Shotts, and W. D. Waltman. Pathology associated with *Edwardsiella ictaluri* in catfish, *Ictalurus punctatus* Rafinesque, and *Danio devario* (Hamilton-Buchanan, 1822). *Journal of Fish Biology*, 27(2):167–175, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davis:1985:GBC**

- [823] K. B. Davis, P. Torrance, N. C. Parker, and M. A. Suttle. Growth, body composition and hepatic tyrosine aminotransferase activity in cortisol-fed channel catfish, *Ictalurus punctatus* Rafinesque. *Journal of Fish Biology*, 27(2):177–184, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ventura:1985:HIM**

- [824] M. T. Ventura and I. Paperna. Histopathology of *Ichthyophthirim multifiliis* infections in fishes. *Journal of Fish Biology*, 27(2):185–203, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:BRd**

- [825] Anonymous. Book reviews. *Journal of Fish Biology*, 27(2):205–213, August 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stein:1985:OME**

- [826] D. L. Stein and C. E. Bond. Observations on the morphology, ecology, and behaviour of *Bathylchnops exilis* Cohen. *Journal of Fish Biology*, 27(3):215–228, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dalzell:1985:SAR**

- [827] P. Dalzell. Some aspects of the reproductive biology of *Spratelloides gracilis* (Schlegel) in the Ysabel Passage, Papua New Guinea. *Journal of Fish Biology*, 27(3):229–237, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bettoli:1985:TPH**

- [828] P. W. Bettoli, W. H. Neill, and S. W. Kelsch. Temperature preference and heat resistance of grass carp, *Ctenopharyngodon idella* (Valenciennes), bighead carp, *Hypophthalmichthys nobilis* (Gray), and their F<sub>1</sub> hybrid. *Journal of Fish Biology*, 27(3):239–247, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Golani:1985:BIP**

- [829] D. Golani and A. Ben-Tuvia. The biology of the Indo–Pacific squirrelfish, *Sargocentron rubrum* (Forsskål), a Suez Canal migrant to the eastern Mediterranean. *Journal of Fish Biology*, 27(3):249–258, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kori-Slakpere:1985:HCC**

- [830] O. Kori-Slakpere. Haematological characteristics of *Clarias isheriensis* Sydenham. *Journal of Fish Biology*, 27(3):259–263, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**vanGlnkel:1985:TCA**

- [831] F. W. van Glnkel, W. B. van Muiswinkel, B. Merchant, E. F. Lizzio, O. W. Dixon, and D. P. Anderson. Temperature comparisons for antibody production in vitro by plaque-forming cells from trout, *Salmo gairdneri* (Richardson), and mice. *Journal of Fish Biology*, 27(3):265–272, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hendee:1985:HAK**

- [832] J. C. Hendee and G. Mueller. Histology of the adenohipophysis of the kelp greenling, *Hexagrammm decagrammus* (Hexagrammidae). *Journal of Fish Biology*, 27(3):273–276, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Konagai:1985:LOM**

- [833] M. Konagai and M. A. Rimmer. Larval ontogeny and morphology of the fire-tailed gudgeon, *Hypseleotris galii* (Eleotridae). *Journal of Fish Biology*, 27(3):277–283, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Formacion:1985:CSO**

- [834] M. J. Formacion and H. Uwa. Cytogenetic studies on the origin and species differentiation of the Philippine medaka, *Oryzias luzonensis*. *Journal of Fish Biology*, 27(3):285–291, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bucke:1985:HSF**

- [835] D. Bucke and S. W. Feist. Histopathology of some fish tumours from British waters, including an olfactory glioma in coalfish, *Pottachius virens* L. *Journal of Fish Biology*, 27(3):293–305, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lester:1985:GMP**

- [836] R. J. G. Lester and R. A. Watson. Growth, mortality, parasitism, and potential yields of two *Priacanthus* species in the South China Sea. *Journal of Fish Biology*, 27(3):307–318, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skarphedinsson:1985:IPS**

- [837] O. Skarphedinsson, V. J. Bye, and A. P. Scott. The influence of photoperiod on sexual development in underyearling rainbow trout, *Salmo*

*gairdneri* Richardson. *Journal of Fish Biology*, 27(3):319–326, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Appler:1985:EHR**

- [838] H. N. Appler. Evaluation of *Hydrodictyon reticulatum* as protein source in feeds for *Oreochromis (Tilapia) niloticus* and *Tilapia zillii*. *Journal of Fish Biology*, 27(3):327–334, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mason:1985:FWP**

- [839] J. C. Mason. The fecundity of the walleye pollock, *Theragra chalcogramma* (Pallas), spawning in Canadian waters. *Journal of Fish Biology*, 27(3):335–346, September 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Philipp:1985:CAF**

- [840] D. P. Philipp, W. F. Childers, and G. S. Whitt. Correlations of allele frequencies with physical and environmental variables for populations of largemouth bass, *Micropterus salmoides* (Lacépède). *Journal of Fish Biology*, 27(4):347–365, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bradley:1985:ART**

- [841] R. W. Bradley, C. DuQuesnay, and J. B. Sprague. Acclimation of rainbow trout, *Salmo gairdneri* Richardson, to zinc: kinetics and mechanism of enhanced tolerance induction. *Journal of Fish Biology*, 27(4):367–379, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clark:1985:PMW**

- [842] E. R. Clark, J. P. Harman, and J. R. M. Forster. Production of metabolic and waste products by intensively farmed rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 27(4):381–393, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crouse-Eisnor:1985:SRB**

- [843] R. A. Crouse-Eisnor, D. K. Cone, and P. H. Odense. Studies on relations of bacteria with skin surface of *Carassius auratus* L. and *Poecilia reticulata*. *Journal of Fish Biology*, 27(4):395–402, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Avenant:1985:ODD**

- [844] A. Avenant and J. G. van As. Occurrence and distribution of *Dolops ranarum* Stuhlmann, ectoparasite of freshwater fish in the Transvaal, South Africa. *Journal of Fish Biology*, 27(4):403–416, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vesey:1985:BBG**

- [845] G. Vesey and T. E. Langford. The biology of the black goby, *Gobius niger* L. in an English south-coast bay. *Journal of Fish Biology*, 27(4):417–429, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coates:1985:FYE**

- [846] David Coates. Fish yield estimates for the Sepik River, Papua New Guinea, a large floodplain system east of ‘Wallace’s Line’. *Journal of Fish Biology*, 27(4):431–443, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnson:1985:CSP**

- [847] C. M. Johnson, M. F. Tatner, and M. T. Horne. Comparison of the surface properties of seven strains of a fish pathogen, *Aeromonas salmonicida*. *Journal of Fish Biology*, 27(4):445–458, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deMorais:1985:GRT**

- [848] L. Tito de Morais. Growth and respiration of two pleuronectiform juveniles from a western Mediterranean bay. *Journal of Fish Biology*, 27(4):459–468, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wickins:1985:GVI**

- [849] J. F. Wickins. Growth variability in individually confined elvers, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 27(4):469–478, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1985:ESR**

- [850] D. A. Wright and F. D. Martin. The effect of starvation on RNA: DNA ratios and growth of larval striped bass, *Morone saxatilis*. *Journal of Fish Biology*, 27(4):479–485, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Garcia:1985:SED**

- [851] L. M. Garcia and I. R. Adelman. An in situ estimate of daily food consumption and alimentary canal evacuation rates of common carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 27(4):487–493, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jones:1985:BRF**

- [852] K. A. Jones and T. J. Hara. Behavioural responses of fishes to chemical cues: results from a new bioassay. *Journal of Fish Biology*, 27(4):495–504, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Basimi:1985:EDF**

- [853] R. A. Basimi and D. J. Grove. Estimates of daily food intake by an inshore population of *Pleuronectes platessa* L. off eastern Anglesey, North Wales. *Journal of Fish Biology*, 27(4):505–520, October 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aprahamian:1985:EMA**

- [854] Miran W. Aprahamian. The effect of the migration of *Alosa fallax fallax* (Laécpède) into fresh water, on branchial and gut parasites. *Journal of Fish Biology*, 27(5):521–532, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Galat:1985:HCG**

- [855] D. L. Galat, G. Post, T. J. Keefe, and G. R. Bouck. Histological changes in the gill, kidney and liver of Lahontan cutthroat trout, *Salmo clarki henshawi*, living in lakes of different salinity-alkalinity. *Journal of Fish Biology*, 27(5):533–552, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pfeiffer:1985:ESH**

- [856] W. Pfeiffer, U. Walz, R. Wolf, and U. Mangold-Wernado. Effects of steroid hormones and other substances on alarm substance cells and mucous cells in the epidermis of the European minnow, *Phoxinus phoxinus* (L.), and other ostariophysi (pisces). *Journal of Fish Biology*, 27(5):553–570, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Karlsson-Norrgren:1985:CDF**

- [857] L. Karlsson-Norrgren and P. Runn. Cadmium dynamics in fish: pulse studies with  $^{109}\text{Cd}$  in female zebrafish, *Brachydanio rerio*. *Journal of*

*Fish Biology*, 27(5):571–581, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1985:ERD**

- [858] J. F. Leatherland and C. Y. Cho. Effect of rearing density on thyroid and interrenal gland activity and plasma and hepatic metabolite levels in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 27(5):583–592, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1985:AMB**

- [859] A. D. Woodhead and N. Armstrong. Aspects of the mating behaviour of male mollies (*Poecilia* spp.). *Journal of Fish Biology*, 27(5):593–601, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Falcao:1985:CCA**

- [860] J. das Neves Falcão and L. A. C. Bertollo. Chromosome characterization in *Acestrorhynchinae* and *Cynopotaminae* (Pisces, Characidae). *Journal of Fish Biology*, 27(5):603–610, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1985:CCI**

- [861] A. D. Pickering and T. G. Pottinger. Cortisol can increase the susceptibility of brown trout, *Salmo trutta* L., to disease without reducing the white blood cell count. *Journal of Fish Biology*, 27(5):611–619, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**DeSilva:1985:BCN**

- [862] S. S. De Silva. Body condition and nutritional ecology of *Oreochromis mossambicus* (Pisces, Cichlidae) populations of man-made lakes in Sri Lanka. *Journal of Fish Biology*, 27(5):621–633, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Degani:1985:RBG**

- [863] G. Degani and M. Lee-Gallagher. The relationship between growth, food conversion and oxygen consumption in developed and underdeveloped American eels, *Anguilla rostrata* Lesueur. *Journal of Fish Biology*, 27(5):635–641, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Steele:1985:LBT**

- [864] C. W. Steele. Latent behavioural toxicity of copper to sea catfish, *Arius felis*, and sheepshead, *Archosargus probatocephalus*. *Journal of Fish Biology*, 27(5):643–654, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crozier:1985:OFF**

- [865] W. W. Crozier. Observations on the food and feeding of the anglerfish, *Lophim piscatorius* L., in the northern Irish Sea. *Journal of Fish Biology*, 27(5):655–665, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**MacArthur:1985:ALM**

- [866] J. I. MacArthur, A. W. Thomson, and T. C. Fletcher. Aspects of leucocyte migration in the plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 27(5):667–676, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:BRe**

- [867] Anonymous. Book reviews. *Journal of Fish Biology*, 27(5):677–681, November 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Linkowski:1985:PBM**

- [868] T. B. Linkowski. Population biology of the myctophid fish *Gymnoscopelus nicholsi* (Gillbert, 1911) from the western South Atlantic. *Journal of Fish Biology*, 27(6):683–698, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wiener:1985:SCC**

- [869] J. G. Wiener, R. A. Jacobson, P. S. Schmidt, and P. R. Heine. Serum calcium concentrations in white sucker, *Catostomus commersoni* Lacépède, and bluegill, *Lepomis macrochirus* Rafinesque, in northern Wisconsin lakes: relation to pH and waterborne calcium. *Journal of Fish Biology*, 27(6):699–709, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hvidsten:1985:MPS**

- [870] N. A. Hvidsten. Mortality of pre-smolt Atlantic salmon, *Salmo salar* L., and brown trout, *Salmo trutta* L., caused by fluctuating water levels in the regulated River Nidelva, central Norway. *Journal of Fish Biology*, 27

(6):711–718, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1985:AME**

- [871] N. R. Merrett and L. Saldanha. Aspects of the morphology and ecology of some unusual deep-sea eels (Synaphobranchidae, Derichthyidae and Nettastomatidae) from the eastern North Atlantic. *Journal of Fish Biology*, 27(6):719–747, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1985:CES**

- [872] P. C. Blaxhall and K. Hood. Cytochemical enzyme staining of fish lymphocytes separated on a Percoll gradient. *Journal of Fish Biology*, 27(6):749–755, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Collvin:1985:ECG**

- [873] L. Collvin. Effects of copper on growth and starvation in perch, *percafluviatilis* L. *Journal of Fish Biology*, 27(6):757–764, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Basimi:1985:SFG**

- [874] R. A. Basimi and D. J. Grove. Studies on feeding, growth and production of a recruited inshore population of *Pleuronectes platessa* (L.) at East Anglesey, North Wales. *Journal of Fish Biology*, 27(6):765–783, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Street:1985:GSP**

- [875] N. E. Street and P. J. B. Hart. Group size and patch location by the stoneloach, *Noemacheilus barbatulus*, a non-visually foraging predator. *Journal of Fish Biology*, 27(6):785–792, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Larrick:1985:HRA**

- [876] S. R. Larrick, D. S. Cherry, and J. Cairns, Jr. Homeostatic regulation of acetazolamide-sensitive esterase activity in the bluegill sunfish, *Lepomis macrochirus*, following acute cold shock. *Journal of Fish Biology*, 27(6):793–804, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berg:1985:FNA**

- [877] O. K. Berg. The formation of non-anadromous populations of Atlantic salmon, *Salmo salar* L., in Europe. *Journal of Fish Biology*, 27(6):805–815, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barber:1985:RND**

- [878] D. L. Barber and J. E. Mills Westermann. Reappraisal of nuclear DNA content of rodlet cells compared to several cell types from some freshwater teleosts, using two methods of microdensitometry. *Journal of Fish Biology*, 27(6):817–826, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Giles:1985:NPU**

- [879] N. Giles and R. S. Phillips. A note on the production and use of antisera for the detection of part-digested sticklebacks in predator stomach-content samples. *Journal of Fish Biology*, 27(6):827–829, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1985:LS**

- [880] Anonymous. List of speakers. *Journal of Fish Biology*, 27(sA):v–vi, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Margetts:1985:P**

- [881] A. R. Margetts. Preface. *Journal of Fish Biology*, 27(sA):vii, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Edwards:1985:KA**

- [882] R. W. Edwards. Keynote address. *Journal of Fish Biology*, 27(sA):1–7, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chadwick:1985:FRP**

- [883] E. M. P. Chadwick. Fundamental research problems in the management of Atlantic salmon, *Salmo salar* L., in Atlantic Canada. *Journal of Fish Biology*, 27(sA):9–25, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Egglshaw:1985:FGP**

- [884] H. J. Egglshaw and P. E. Shackley. Factors governing the production of juvenile Atlantic salmon in Scottish streams. *Journal of Fish Biology*, 27

(sA):27–33, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Elliott:1985:PDM**

- [885] J. M. Elliott. Population dynamics of migratory trout, *Salmo trutta*, in a Lake District stream, 1966–83, and their implications for fisheries management. *Journal of Fish Biology*, 27(sA):35–43, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Solomon:1985:SSR**

- [886] D. J. Solomon. Salmon stock and recruitment, and stock enhancement. *Journal of Fish Biology*, 27(sA):45–57, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zalewski:1985:FLG**

- [887] M. Zalewski, P. Frankiewicz, and B. Brewinska. The factors limiting growth and survival of brown trout, *Salmo trutta m. fario* L. introduced to different types of streams. *Journal of Fish Biology*, 27(sA):59–73, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Winstone:1985:AFC**

- [888] A. J. Winstone, A. S. Gee, and P. V. Varallo. The assessment of flow characteristics at certain weirs in relation to the upstream movement of migratory salmonids. *Journal of Fish Biology*, 27(sA):75–83, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milner:1985:HEF**

- [889] N. J. Milner, R. J. Hemsworth, and B. E. Jones. Habitat evaluation as a fisheries management tool. *Journal of Fish Biology*, 27(sA):85–108, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cave:1985:EKS**

- [890] J. D. Cave. The effects of the Kielder scheme on fisheries. *Journal of Fish Biology*, 27(sA):109–121, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Phillips:1985:EIS**

- [891] M. J. Phillips, M. C. M. Beveridge, and L. G. Ross. The environmental impact of salmonid cage culture on inland fisheries: present status and future trends. *Journal of Fish Biology*, 27(sA):123–137, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hamilton:1985:DPR**

- [892] R. M. Hamilton. Discharges of pesticides to the Rivers Mole and Taw, their accumulation in fish flesh and possible effects on fish stocks. *Journal of Fish Biology*, 27(sA):139–149, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hickley:1985:CES**

- [893] P. Hickley and A. Starkie. Cost effective sampling of fish populations in large water bodies. *Journal of Fish Biology*, 27(sA):151–161, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jordan:1985:SSR**

- [894] D. R. Jordan and J. S. Wortley. Sampling strategy related to fish distribution, with particular reference to the Norfolk Broads. *Journal of Fish Biology*, 27(sA):163–173, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coles:1985:SMF**

- [895] T. F. Coles, J. S. Wortley, and P. Noble. Survey methodology for fish population assessment within Anglian water. *Journal of Fish Biology*, 27(sA):175–186, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Linfield:1985:ACH**

- [896] R. S. J. Linfield. An alternative concept to home range theory with respect to populations of cyprinids in major river systems. *Journal of Fish Biology*, 27(sA):187–196, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Solbe:1985:EPF**

- [897] J. F. de L. G. Solbé, V. A. Cooper, C. A. Willis, and M. J. Mallett. Effects of pollutants in fresh waters on European non-salmonid fish i: Non-metals. *Journal of Fish Biology*, 27(sA):197–207, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mills:1985:EIF**

- [898] C. A. Mills and R. H. K. Mann. Environmentally-induced fluctuations in year-class strength and their implications for management. *Journal of Fish Biology*, 27(sA):209–226, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mann:1985:PMS**

- [899] R. H. K. Mann. A pike management strategy for a trout fishery. *Journal of Fish Biology*, 27(sA):227–234, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reid:1985:EPF**

- [900] D. M. Reid and W. T. Momot. Evaluation of pulse fishing for the walleye, *Stizostedion vitreum vitreum*, in Henderson Lake, Ontario. *Journal of Fish Biology*, 27(sA):235–251, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bnińska:1985:PIC**

- [901] M. Bnińska. The possibilities of improving catchable fish stocks in lakes undergoing eutrophication. *Journal of Fish Biology*, 27(sA):253–261, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Payne:1985:EPP**

- [902] A. I. Payne and B. McCarton. Estimation of population parameters and their application to the development of fishery management models in two African rivers. *Journal of Fish Biology*, 27(sA):263–277, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1985:APT**

- [903] P. A. Henderson. An approach to the prediction of temperate freshwater fish communities. *Journal of Fish Biology*, 27(sA):279–291, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Katz:1985:UME**

- [904] A. H. Katz and H. M. Katz. Use of a municipal environmental quality index for understanding and management of aquatic habitats and fish populations. *Journal of Fish Biology*, 27(sA):293–300, December 1985. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cornish:1986:GLK**

- [905] I. M. E. Cornish and T. W. Moon. The glucose and lactate kinetics of American eels, *Anguilla rostrata* (LeSueur), under MS 222 anaesthesia. *Journal of Fish Biology*, 28(1):1–8, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leong:1986:SOM**

- [906] T. S. Leong. Seasonal occurrence of metazoan parasites of *Puntius binotatus* in an irrigation canal, Pulau Pinang, Malaysia. *Journal of Fish Biology*, 28(1):9–16, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Irvine:1986:EVD**

- [907] J. R. Irvine. Effects of varying discharge on the downstream movement of salmon fry, *Oncorhynchus tshawytscha* Walbaum. *Journal of Fish Biology*, 28(1):17–28, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leknes:1986:FSC**

- [908] I. L. Leknes. Fine structure and cytochemistry of the endothelial cells and rodlet cells in the bulbus arteriosus in species of *Cichlidae* (Teleostei). *Journal of Fish Biology*, 28(1):29–36, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Booth:1986:GEP**

- [909] D. J. Booth and J. A. Keast. Growth energy partitioning by juvenile bluegill sunfish, *Lepomis macrochirus* Rafinesque. *Journal of Fish Biology*, 28(1):37–45, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bubien:1986:EAP**

- [910] J. K. Bubien and T. L. Meade. Electrophysiological abnormalities produced by ammonium in isolated perfused brook trout, *Salvelinus fontinalis*, hearts. *Journal of Fish Biology*, 28(1):47–53, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Van:1986:RNM**

- [911] H.-Y. Van. Report of a naturally masculinized female of the Clear Creek gambusia, *Gambusia heterochir* Hubbs. *Journal of Fish Biology*, 28(1):55–59, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Joensen:1986:UTC**

- [912] J. E. Joensen and B. Korsgaard. Uptake, time-course distribution and elimination of cadmium in embryos and tissues of the pregnant *Zoarces viviparus* (L) after intraovarian loading. *Journal of Fish Biology*, 28(1):61–68, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crespo:1986:MFA**

- [913] S. Crespo, G. Nonnotte, D. A. Colin, C. Leray, L. Nonnotte, and A. Aubree. Morphological and functional alterations induced in trout intestine by dietary cadmium and lead. *Journal of Fish Biology*, 28(1):69–80, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Santulli:1986:ECG**

- [914] A. Santulli and V. D'Amello. The effects of carnitine on the growth of sea bass, *Dicentrarchus labrax* L., fry. *Journal of Fish Biology*, 28(1):81–86, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agius:1986:IEA**

- [915] C. Agius and W. Couchman. Induction of enhanced alkaline phosphatase activity in the melano-macrophage centres of *Oreochromis aureus* (Steindachner) through starvation and vaccination. *Journal of Fish Biology*, 28(1):87–92, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Romer:1986:MGS**

- [916] G. S. Romer and A. McLachlan. Mullet grazing on surf diatom accumulations. *Journal of Fish Biology*, 28(1):93–104, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dabrowski:1986:NTM**

- [917] K. R. Dabrowski. A new type of metabolism chamber for the determination of active and postprandial metabolism offish, and consideration of results for coregonid and salmon juveniles. *Journal of Fish Biology*, 28(1):105–117, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dheer:1986:HHR**

- [918] J. M. S. Dheer, T. R. Dheer, and C. L. Mahajan. Haematological and haematopoietic response to sodium chloride stress in a freshwater air-breathing fish *channapunctatus* Bloch. *Journal of Fish Biology*, 28(1):119–128, January 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jory:1986:IPQ**

- [919] D. E. Jory. An incident of predation on queen conch, *Strombus gigas* L. (Mollusca, Strombidae), by Atlantic permit, *Trachinotus falcatus* L.



(Pisces, Carangidae). *Journal of Fish Biology*, 28(2):129–131, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gaudreault:1986:IID**

- [920] A. Gaudreault, T. Miller, W. L. Montgomery, and G. J. FitzGerald. Interspecific interactions and diet of sympatric juvenile brook charr, *Salvelinus fontinalis*, and adult ninespine sticklebacks, *Pungitius pungitius*. *Journal of Fish Biology*, 28(2):133–140, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eiras:1986:SAI**

- [921] J. C. Eiras. Some aspects of the infection of bib, *Trisopterus luscus* (L.), by the parasitic copepod *Lernaecera luscii* (Basset-Smith, 1896) in Portuguese waters. *Journal of Fish Biology*, 28(2):141–145, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1986:FHF**

- [922] E. J. Hyslop. The food habits of four small-sized species of Mormyridae from the floodplain pools of the Sokoto-Rima river basin, Nigeria. *Journal of Fish Biology*, 28(2):147–151, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bertollo:1986:CTC**

- [923] L. A. C. Bertollo, O. Moreira-Filho, and P. M. Galetti, Jr. Cytogenetics and taxonomy: considerations based on chromosome studies of freshwater fish. *Journal of Fish Biology*, 28(2):153–159, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Colgan:1986:RDE**

- [924] P. W. Colgan, J. A. Brown, and S. D. Orsatti. Role of diet and experience in the development of feeding behaviour in largemouth bass, *Micropterus salmoides*. *Journal of Fish Biology*, 28(2):161–170, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Herzig:1986:ITE**

- [925] A. Herzig and H. Winkler. The influence of temperature on the embryonic development of three cyprinid fishes, *Abramis brama*, *Chalcalburnus chalcoides mento* and *Vimba vimba*. *Journal of Fish Biology*, 28(2):171–181, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weekes:1986:FRL**

- [926] P. J. Weekes and B. Penlington. First records of *Ligula intestinalis* (Cestoda) in rainbow trout, *Salmo gairdneri*, and common bully, *Gobiomorphus cotidianus*, in New Zealand. *Journal of Fish Biology*, 28(2):183–190, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Danulat:1986:EVD**

- [927] E. Danulat. The effects of various diets on chitinase and  $\beta$ -glucosidase activities and the condition of cod, *Gadus morhua* (L.). *Journal of Fish Biology*, 28(2):191–197, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cali:1986:EIA**

- [928] A. Cali, P. M. Takvorian, J. J. Ziskowski, and T. K. Sawyer. Experimental infection of American winter flounder (*Pseudopleuronectes americanus*) with *Glugea stephani* (Microsporida). *Journal of Fish Biology*, 28(2):199–206, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Conneely:1986:EFI**

- [929] J. J. Conneely and T. K. McCarthy. Ecological factors influencing the composition of the parasite fauna of the European eel, *Anguilla anguilla* (L.), in Ireland. *Journal of Fish Biology*, 28(2):207–219, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Olsen:1986:CAB**

- [930] K. H. Olsén. Chemo-attraction between juveniles of two sympatric stocks of Arctic charr, *Salvelinus alpinus* (L.), and their gene frequency of serum esterases. *Journal of Fish Biology*, 28(2):221–231, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beacham:1986:CDB**

- [931] T. D. Beacham and C. B. Murray. Comparative developmental biology of pink salmon, *Oncorhynchus gorbusha*, in southern British Columbia. *Journal of Fish Biology*, 28(2):233–246, February 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roy:1986:QQA**

- [932] S. Roy and B. C. Pal. Quantitative and qualitative analysis of spawning behaviour of *Heteropneustes fossilis* (Bloch.) (Siluridae) in laboratory

aquaria. *Journal of Fish Biology*, 28(3):247–254, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Olsen:1986:ERA**

- [933] K. H. Olsén. Emission rate of amino acids and ammonia and their role in olfactory preference behaviour of juvenile Arctic charr, *Salvelinus alpinus* (L.). *Journal of Fish Biology*, 28(3):255–265, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sloley:1986:ESP**

- [934] B. D. Sloley, B. E. Hickie, D. G. Dixon, R. G. H. Downer, and R. J. Martin. The effects of sodium pentachlorophenate, diet and sampling procedure on amine and tryptophan concentrations in the brain of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 28(3):267–277, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Geffen:1986:GHL**

- [935] A. J. Geffen. The growth of herring larvae, *Clupea harengus* L., in the Clyde: an assessment of the suitability of otolith ageing methods. *Journal of Fish Biology*, 28(3):279–288, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sakanari:1986:LIP**

- [936] J. A. Sakanari and M. Moserj. Lesion induction by the plerocercoid *Lacistorhynchus tenuis* (Cestoda) and wound healing in the striped bass *Morone saxatilis* (Walbaum). *Journal of Fish Biology*, 28(3):289–296, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Garratt:1986:PHS**

- [937] P. A. Garratt. Protogynous hermaphroditism in the slinger, *Chrysoblephus puniceus* (Gilchrist & Thompson, 1908) (Teleostei: Sparidae). *Journal of Fish Biology*, 28(3):297–306, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dederen:1986:BAT**

- [938] L. H. T. Dederen, R. S. E. W. Leuven, S. E. Wendelaar, and F. G. F. Oyen. Biology of the acid-tolerant fish species *Umbra pygmaea* (De Kay, 1842). *Journal of Fish Biology*, 28(3):307–326, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1986:KSA**

- [939] A. F. Brown, J. C. Chubb, and C. J. Veltkamp. A key to the species of Acanthocephala parasitic in British freshwater fishes. *Journal of Fish Biology*, 28(3):327–334, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heggberget:1986:AMA**

- [940] T. G. Heggberget, T. Haukebø, and B. Veie-Rosvoll. An aerial method of assessing spawning activity of Atlantic salmon, *Salmo salar* L., and brown trout, *Salmo trutta* L., in Norwegian streams. *Journal of Fish Biology*, 28(3):335–342, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heins:1986:SPN**

- [941] D. C. Heins and F. G. Rabito, Jr. Spawning performance in North American minnows: direct evidence of the occurrence of multiple clutches in the genus *Notropis*. *Journal of Fish Biology*, 28(3):343–357, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Elras:1986:HPL**

- [942] J. C. Elras, A. A. Rego, and G. C. Pavanelli. Histopathology in *Paulicea lutkeni* (Pisces: Pimelodidae) resulting from infections with *Megathylacus brooksi* and *Jauela glandicephalus* (Cestoda: Proteocephalidae). *Journal of Fish Biology*, 28(3):359–365, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Haug:1986:MBG**

- [943] T. Haug and S. E. Fevolden. Morphology and biochemical genetics of Atlantic halibut, *Hippoglossus hippoglossus* (L.), from various spawning grounds. *Journal of Fish Biology*, 28(3):367–378, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1986:PSC**

- [944] M. Jobling and T.-G. Reinsnes. Physiological and social constraints on growth of Arctic charr, *Salvelinus alpinus* L.: an investigation of factors leading to stunting. *Journal of Fish Biology*, 28(3):379–384, March 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heming:1986:AIC**

- [945] T. A. Heming and T. A. Watson. Activity and inhibition of carbonic anhydrase in *Amia calva*, a bimodal-breathing holostean fish. *Journal*

of *Fish Biology*, 28(4):385–392, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoyle:1986:HCM**

- [946] J. Hoyle, H. S. Gill, and A. H. Weatherley. Histochemical characterization of myotomal muscle in the grass pickerel, *Esox americanus vermiculatus* (LeSeuer), and the muskellunge, *E. masquinongy* (Mitchell). *Journal of Fish Biology*, 28(4):393–401, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1986:COF**

- [947] G. M. Hughes, I. Martinez, and G. Boeuf. Comparison of osmotic fragility of red blood cells of freshwater-adapted and seawater-adapted rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 28(4):403–406, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matthews:1986:GVT**

- [948] W. J. Matthews. Geographic variation in thermal tolerance of a widespread minnow *Notropis lutrensis* of the North American mid-west. *Journal of Fish Biology*, 28(4):407–417, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Song:1986:TEM**

- [949] Y. C. Song, F. J. Ratty, and R. M. Laurs. Transmission electron microscope observations of C-banded skipjack tuna chromosomes. *Journal of Fish Biology*, 28(4):419–424, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Watanabe:1986:WIB**

- [950] W. O. Watanabe and C-M. Kuo. Water and ion balance in hydrating oocytes of the grey mullet, *Mugil cephalus* (L.), during hormone-induced final maturation. *Journal of Fish Biology*, 28(4):425–437, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pitcher:1986:DDP**

- [951] T. J. Pitcher, D. A. Green, and A. E. Magurran. Dicing with death: predator inspection behaviour in minnow shoals. *Journal of Fish Biology*, 28(4):439–448, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Daoulas:1986:SVE**

- [952] Ch. Daoulas and A. N. Economou. Seasonal variation of egg size in the sardine, *Sardino pilchardus* Walb., of the Saronikos Gulf: causes and a probable explanation. *Journal of Fish Biology*, 28(4):449–457, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crozier:1986:EEP**

- [953] W. W. Crozier and A. Ferguson. Electrophoretic examination of the population structure of brown trout, *Salmo trutta* L., from the Lough Neagh catchment, Northern Ireland. *Journal of Fish Biology*, 28(4):459–477, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1986:EIIa**

- [954] G. J. A. Kennedy and C. D. Strange. The effects of intra- and inter-specific competition on the survival and growth of stocked juvenile Atlantic salmon, *Salmo solar* L., and resident trout, *Salmo trutta* L., in an upland stream. *Journal of Fish Biology*, 28(4):479–489, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fox:1986:EFH**

- [955] D. P. Fox, R. Johnstone, and E. Durward. Erythrocyte fusion in heat-shocked Atlantic salmon. *Journal of Fish Biology*, 28(4):491–499, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tongiorgi:1986:TPU**

- [956] P. Tongiorgi, L. Tosi, and M. Balsamo. Thermal preferences in upstream migrating glass-eels of *Anguilla anguilla* (L.). *Journal of Fish Biology*, 28(4):501–510, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ellsaesser:1986:HIC**

- [957] C. F. Ellsaesser and L. W. Clem. Haematological and immunological changes in channel catfish stressed by handling and transport. *Journal of Fish Biology*, 28(4):511–521, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:A**

- [958] Anonymous. Announcements. *Journal of Fish Biology*, 28(4):523, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:E**

- [959] Anonymous. Errata. *Journal of Fish Biology*, 28(4):524, April 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Metcalf:1986:IVC**

- [960] N. B. Metcalfe. Intraspecific variation in competitive ability and food intake in salmonids: consequences for energy budgets and growth rates. *Journal of Fish Biology*, 28(5):525–531, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1986:SAB**

- [961] A. Wright, P. J. Dalzell, and A. H. Richards. Some aspects of the biology of the red bass, *Lutjanus bohar* (Forsskål), from the Tigak Islands, Papua New Guinea. *Journal of Fish Biology*, 28(5):533–544, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Parish:1986:LES**

- [962] N. Parish, A. Wrathmell, S. Hart, and J. E. Harris. The leucocytes of the elasmobranch *Scyliorhinus canicula* L. — a morphological study. *Journal of Fish Biology*, 28(5):545–561, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Iwama:1986:CSH**

- [963] G. K. Iwama, G. L. Greek, and D. J. Randall. Changes in selected haematological parameters in juvenile Chinook salmon subjected to a bacterial challenge and a toxicant. *Journal of Fish Biology*, 28(5):563–572, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roubal:1986:BOP**

- [964] Frank R. Roubal. Blood and other possible inflammatory cells in the sparid *Acanthopagrus australis* (Günther). *Journal of Fish Biology*, 28(5):573–593, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**White:1986:SCS**

- [965] A. White, T. C. Fletcher, and J. A. Pope. Seasonal changes in serum lipid composition of the plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 28(5):595–606, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Taylor:1986:EEG**

- [966] P. B. Taylor. Experimental evidence for geomagnetic orientation in juvenile salmon, *Oncorhynchus tshawytscha* Walbaum. *Journal of Fish Biology*, 28(5):607–623, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowx:1986:CSC**

- [967] I. G. Cowx and N. M. Broughton. Changes in the species composition of anglers' catches in the River Trent (England) between 1969 and 1984. *Journal of Fish Biology*, 28(5):625–636, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jensen:1986:GSE**

- [968] J. W. Jensen. Gillnet selectivity and the efficiency of alternative combinations of mesh sizes for some freshwater fish. *Journal of Fish Biology*, 28(5):637–646, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:BRa**

- [969] Anonymous. Book reviews. *Journal of Fish Biology*, 28(5):647–652, May 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weeks:1986:ITC**

- [970] B. A. Weeks, J. E. Warinner, P. L. Mason, and D. S. McGinnis. Influence of toxic chemicals on the chemotactic response of fish macrophages. *Journal of Fish Biology*, 28(6):653–658, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1986:EDD**

- [971] A. F. Brown. Evidence for density-dependent establishment and survival of *Pomphorhynchus laevis* (Müller, 1776) (Acanthocephala) in laboratory-infected *Salmo gairdneri* Richardson and its bearing on wild populations in *Leuciscus cephalus* (L.). *Journal of Fish Biology*, 28(6):659–669, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1986:VCM**

- [972] J. F. Craig, A. Sharma, and K. Smile. The variability in catches from multi-mesh gillnets fished in three Canadian lakes. *Journal of Fish Biology*, 28(6):671–678, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Lesack:1986:ECP**

- [973] L. F. W. Lesack. Estimates of catch and potential yield for the riverine artisanal fishery in The Gambia, West Africa. *Journal of Fish Biology*, 28(6):679–700, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoffmann:1986:SLC**

- [974] R. W. Hoffmann, J. Meder, M. Klein, K. Osterkornj, and R. D. Negele. Studies on lesions caused by plerocercoids of *Triacnophorus nodulosmin* some fish of an alpine lake, the Königssee. *Journal of Fish Biology*, 28(6):701–712, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sire:1986:ODS**

- [975] J.-Y. Sire. Ontogenic development of surface ornamentation in the scales of *Hemichromis bimaculatus* (Cichlidae). *Journal of Fish Biology*, 28(6):713–724, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Audet:1986:ECS**

- [976] C. Audet, G. J. Fitzgerald, and H. Guderley. Environmental control of salinity preferences in four sympatric species of sticklebacks: *Gasterosteus aculeatus*, *Gasterosteus wheatlandi*, *Pungitius pungitius* and *Apeltes quadracus*. *Journal of Fish Biology*, 28(6):725–739, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Schindler:1986:SCC**

- [977] J. F. Schindler and U. de Vries. Scanning cytophotometry of carp, *Cyprinus carpio* L., erythrocyte populations: the influence of short-term hypoxic environment and the recovery period following severe bleeding. *Journal of Fish Biology*, 28(6):741–752, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:BRb**

- [978] Anonymous. Book reviews. *Journal of Fish Biology*, 28(6):753–756, June 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Araujo-Lima:1986:FMR**

- [979] C. A. R. M. Araujo-Lima, L. P. S. Portugal, and E. G. Ferreira. Fish–macrophyte relationship in the Anavilhanas Archipelago, a black water system in the Central Amazon. *Journal of Fish Biology*, 29(1):1–11, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kilambi:1986:AGR**

- [980] R. V. Kilambi. Age, growth and reproductive strategy of the snakehead, *Ophicephalus striatus* Bloch, from Sri Lanka. *Journal of Fish Biology*, 29(1):13–22, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sainsbury:1986:EFC**

- [981] K. J. Sainsbury. Estimation of food consumption from field observations of fish feeding cycles. *Journal of Fish Biology*, 29(1):23–36, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hodson:1986:ETH**

- [982] P. V. Hodson and B. R. Blunt. The effect of time from hatch on the yolk conversion efficiency of rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 29(1):37–46, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hendrick:1986:PCP**

- [983] M. Hendrick, A. DiNapoli, P. Cammarata, and S. Pincus. Purification of carp putative eosinophils on metrizamide gradients. *Journal of Fish Biology*, 29(1):47–51, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sazima:1986:SFB**

- [984] I. Sazima. Similarities in feeding behaviour between some marine and freshwater fishes in two tropical communities. *Journal of Fish Biology*, 29(1):53–65, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craig:1986:WSV**

- [985] J. F. Craig and K. Smiley. Walleye, *Stizostedion vitreum*, and northern pike, *Esox lucius*, populations in three Alberta lakes. *Journal of Fish Biology*, 29(1):67–85, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Harris:1986:CNC**

- [986] R. K. Harris, T. Nishiyama, and A. J. Paul. Carbon, nitrogen and caloric content of eggs, larvae, and juveniles of the walleye pollock, *Theragra chalcogramma*. *Journal of Fish Biology*, 29(1):87–98, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brabrand:1986:JRI**

- [987] Å. Brabrand, B. Faafeng, and J. P. M. Nilssen. Juvenile roach and invertebrate predators: delaying the recovery phase of eutrophic lakes by suppression of efficient filter-feeders. *Journal of Fish Biology*, 29(1):99–106, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Giles:1986:CPF**

- [988] N. Giles, R. M. Wright, and M. E. Nord. Cannibalism in pike fry, *Esox lucius* L.: some experiments with fry densities. *Journal of Fish Biology*, 29(1):107–113, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stables:1986:PIR**

- [989] J. N. Stables and L. H. Chappell. Putative immune response of rainbow trout, *Salmo gairdneri*, to *Diplostomum spathaceum* infections. *Journal of Fish Biology*, 29(1):115–122, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mittal:1986:FSS**

- [990] A. K. Mittal and G. D. Nigam. Fish skin surface lipids: phospholipids. *Journal of Fish Biology*, 29(1):123–138, July 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tabachek:1986:IDP**

- [991] J. L. Tabachek. Influence of dietary protein and lipid levels on growth, body composition and utilization efficiencies of Arctic charr, *Salvelinus alpinus* L. *Journal of Fish Biology*, 29(2):139–151, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mcbride:1986:CST**

- [992] J. R. Mcbride, U. H. M. Fagerlund, H. M. Dye, and J. Bagshaw. Changes in structure of tissues and in plasma cortisol during the spawning migration of pink salmon, *Oncorhynchus gorbucha* (Walbaum). *Journal of Fish Biology*, 29(2):153–166, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dye:1986:CRP**

- [993] H. M. Dye, J. P. Sumpter, U. H. M. Fagerlund, and E. M. Donaldson. Changes in reproductive parameters during the spawning migration of

pink salmon, *Oncorhynchus gorbuscha* (Walbaum). *Journal of Fish Biology*, 29(2):167–176, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mughal:1986:ISJ**

- [994] M. S. Mughal and M. J. Manning. The immune system of juvenile thick-lipped grey mullet, *Chelon labrosus* Risso: antibody responses to soluble protein antigens. *Journal of Fish Biology*, 29(2):177–186, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Malte:1986:EAH**

- [995] H. Malte. Effects of aluminium in hard, acid water on metabolic rate, blood gas tensions and ionic status in the rainbow trout. *Journal of Fish Biology*, 29(2):187–198, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1986:EI Ib**

- [996] G. J. A. Kennedy and C. D. Strange. The effects of intra- and inter-specific competition on the distribution of stocked juvenile Atlantic salmon, *Salmo salar* L., in relation to depth and gradient in an upland trout, *Salmo trutta* L., stream. *Journal of Fish Biology*, 29(2):199–214, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1986:CPF**

- [997] C. R. Kennedy, D. d'A. Laffoley, G. Bishop, P. Jones, and M. Taylor. Communities of parasites of freshwater fish of Jersey, Channel Islands. *Journal of Fish Biology*, 29(2):215–226, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Woodhead:1986:RFC**

- [998] A. D. Woodhead and C. Carlson. The role of female competition in the mating success of two clones of the Amazon molly, *Poecilia formosa*. *Journal of Fish Biology*, 29(2):227–232, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnsen:1986:IAS**

- [999] B. O. Johnsen and A. J. Jensen. Infestations of Atlantic salmon, *Salmo salar*, by *Gyrodactylus salaris* in Norwegian rivers. *Journal of Fish Biology*, 29(2):233–241, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kindle:1986:BIT**

- [1000] K. R. Kindle and D. H. Whitmore. Biochemical indicators of thermal stress in *Tilapia aurea* (Steindachner). *Journal of Fish Biology*, 29(2):243–255, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnson:1986:SEM**

- [1001] E. Z. Johnson and R. G. Werner. Scanning electron microscopy of the chorion of selected freshwater fishes. *Journal of Fish Biology*, 29(2):257–265, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**DeSilva:1986:OCO**

- [1002] C. D. De Silva, S. Premawansa, and C. N. Keembiyahetty. Oxygen consumption in *Oreochromis niloticus* (L.) in relation to development, salinity, temperature and time of day. *Journal of Fish Biology*, 29(2):267–277, August 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cunjak:1986:SCP**

- [1003] R. A. Cunjak and G. Power. Seasonal changes in the physiology of brook trout, *Salvelinus fontinalis* (Mitchill), in a sub-Arctic river system. *Journal of Fish Biology*, 29(3):279–288, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davenport:1986:SMM**

- [1004] J. Davenport, S. Lønning, and E. Kjørsvik. Some mechanical and morphological properties of the chorions of marine teleost eggs. *Journal of Fish Biology*, 29(3):289–301, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wyche:1986:FEP**

- [1005] C. J. Wyche and S. E. Shackley. The feeding ecology of *Pleuronectes platessa* L., *Limanda limanda* (L.) and *Scophthalmus rhombus* (L.) in Carmarthen Bay, South Wales, U.K. *Journal of Fish Biology*, 29(3):303–311, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sadler:1986:SEL**

- [1006] K. Sadler and S. Lynam. Some effects of low pH and calcium on the growth and tissue mineral content of yearling brown trout, *Salmo*

*trutta*. *Journal of Fish Biology*, 29(3):313–324, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crawford:1986:DEL**

- [1007] C. M. Crawford. Development of eggs and larvae of the flounders *Rhombosolea tapirina* and *Ammotretis rostratus* (Pisces: Pleuronectidae). *Journal of Fish Biology*, 29(3):325–334, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1986:CBC**

- [1008] A. D. Pickering. Changes in blood cell composition of the brown trout, *Salmo trutta* L., during the spawning season. *Journal of Fish Biology*, 29(3):335–347, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Suzuki:1986:MPC**

- [1009] K. Suzuki. Morphological and phagocytic characteristics of peritoneal exudate cells in tilapia, *Oreochromis niloticus* (Trewavas), and carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 29(3):349–364, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Behrend:1986:MEF**

- [1010] K. Behrend. The musculature of the electric fish *Eigenmannia virescens* (South American green knife fish) characterized with cytochrome oxidase staining. *Journal of Fish Biology*, 29(3):365–369, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Drost:1986:EFS**

- [1011] M. R. Drost and J. G. M. van den Boogaart. The energetics of feeding strikes in larval carp, *Cyprinus carpio*. *Journal of Fish Biology*, 29(3):371–379, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Abidin:1986:RBT**

- [1012] A. Z. Abidin. The reproductive biology of a tropical cyprinid, *Hampala macrolepidota* (Van Hasselt), from Zoo Negara Lake, Kuala Lumpur, Malaysia. *Journal of Fish Biology*, 29(3):381–391, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1986:PSM**

- [1013] G. M. Hughes, Y. Kikuchi, and J. Barrington. Physiological salines and the mechanical properties of trout red blood cells. *Journal of Fish Biol-*

ogy, 29(3):393–402, September 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Deegan:1986:CBC**

- [1014] L. A. Deegan. Changes in body composition and morphology of young-of-the-year gulf menhaden, *Brevoortia patronus* Goode, in Fourleague Bay, Louisiana. *Journal of Fish Biology*, 29(4):403–415, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Poynton:1986:DFH**

- [1015] S. L. Poynton. Distribution of the flagellate *Hexamita salmonis* Moore, 1922 and the microsporidian *Loma salmonae* Putz, Hoffman and Dunbar, 1965 in brown trout, *Salmo trutta* L., and rainbow trout, *Salmo gairdneri* Richardson, in the River Itchen (U.K.) and three of its fish farms. *Journal of Fish Biology*, 29(4):417–429, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1986:EFO**

- [1016] J. M. Wright. The ecology of fish occurring in shallow water creeks of a Nigerian mangrove swamp. *Journal of Fish Biology*, 29(4):431–441, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1986:PED**

- [1017] G. M. Hughes, J. S. Datta Munshi, and J. Ojha. Post-embryonic development of water- and airbreathing organs of *Anabas testudineus* (Bloch). *Journal of Fish Biology*, 29(4):443–450, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nakari:1986:BRE**

- [1018] T. Nakari, A. Soivio, and S. Pesonen. Book review: Effects of advanced photoperiod cycle on the epidermis and gonadosomatic index of 2-year-old rainbow trout, *Salmo gairdneri* R., reared at natural temperature. *Journal of Fish Biology*, 29(4):451–457, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jensen:1986:UMA**

- [1019] A. J. Jensen, T. G. Heggberget, and B. O. Johnsen. Upstream migration of adult Atlantic salmon, *Salmo salar* L., in the River Vefsna, northern Norway. *Journal of Fish Biology*, 29(4):459–465, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bagliniere:1986:PEJ**

- [1020] J.-L. Baglinière and A. Champigneulle. Population estimates of juvenile Atlantic salmon, *Salmo salar*, as indices of smolt production in the R. Scorff, Brittany. *Journal of Fish Biology*, 29(4):467–482, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mohr:1986:QMR**

- [1021] A. Mohr, W. Wolf, M. Bohl, and R. Hoffmann. Quantification of methaemoglobin reduction in red blood cells of the rainbow trout *Salmo gairdneri* R. *Journal of Fish Biology*, 29(4):483–487, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Balogun:1986:FDK**

- [1022] J. K. Balogun. Fish distribution in Kainji Lake, Nigeria. *Journal of Fish Biology*, 29(4):489–498, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Semple:1986:RBE**

- [1023] G. P. Semple. Reproductive behaviour and early development of the Drysdale hardyhead, *Craterocephalus* sp. nov. (Pisces: Atherinidae), from the Alligator Rivers System, Northern Territory, Australia. *Journal of Fish Biology*, 29(4):499–506, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wiley:1986:RBF**

- [1024] M. J. Wiley, S. M. Pescitelli, and L. D. Wike. The relationship between feeding preferences and consumption rates in grass carp and grass carp × bighead carp hybrids. *Journal of Fish Biology*, 29(4):507–514, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skurdal:1986:IVM**

- [1025] J. Skurdal, O. K. Skogheim, and T. Qvenild. Indicative value of mercury concentration in adipose fin of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 29(4):515–517, October 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Krasznai:1986:SIT**

- [1026] Z. Krasznai and T. Márian. Shock-induced triploidy and its effect on growth and gonad development of the European catfish, *Silurus glanis* L. *Journal of Fish Biology*, 29(5):519–527, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Vitturi:1986:CPA**

- [1027] R. Vitturi, A. Mazzola, M. Macaluso, and E. Catalano. Chromosomal polymorphism associated with Robertsonian fusion in *Seriola dumerili* (Risso, 1810) (Pisces: Carangidae). *Journal of Fish Biology*, 29(5):529–534, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hansen:1986:LTT**

- [1028] H. J. M. Hansen and A. T. A. Fattah. Long-term tagging of elvers, *Anguilla anguilla*, with radioactive europium. *Journal of Fish Biology*, 29(5):535–540, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1986:CFB**

- [1029] N. F. Hughes. Changes in the feeding biology of the Nile perch, *Lates niloticus* (L.) (Pisces: Centropomidae), in Lake Victoria, East Africa since its introduction in 1960, and its impact on the native fish community of the Nyanza Gulf. *Journal of Fish Biology*, 29(5):541–548, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Craik:1986:CEW**

- [1030] J. C. A. Craik and S. M. Harvey. The carotenoids of eggs of wild and farmed Atlantic salmon, and their changes during development to the start of feeding. *Journal of Fish Biology*, 29(5):549–565, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lee:1986:EOA**

- [1031] C. S. Lee, G. M. Weber, and C. S. Tamaru. Effect of orally-administered  $17\alpha$ -methyltestosterone on spermatogenesis in immature milkfish, *Chanos chanos* Forsskål. *Journal of Fish Biology*, 29(5):567–572, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turner:1986:TDC**

- [1032] G. F. Turner. Territory dynamics and cost of reproduction in a captive population of the colonial nesting mouthbrooder *Oreochromis mossambicus* (Peters). *Journal of Fish Biology*, 29(5):573–587, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Badcock:1986:ARB**

- [1033] J. Badcock. Aspects of the reproductive biology of *Gonostoma bathyphilum* (Gonostomatidae). *Journal of Fish Biology*, 29(5):589–603, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bitterlich:1986:BFF**

- [1034] G. Bitterlich and E. Schaber. Bacteria — food or food competitors of silver carp, *Hypophthalmichthys molitrix* Val.? *Journal of Fish Biology*, 29(5):605–612, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alabaster:1986:DOT**

- [1035] J. S. Alabaster and P. J. Gough. The dissolved oxygen and temperature requirements of Atlantic salmon, *Salmo salar* L., in the Thames Estuary. *Journal of Fish Biology*, 29(5):613–621, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cochrane:1986:MYY**

- [1036] K. L. Cochrane. Mortality of young-of-the-year *Oreochromis mossambicus* in Hartbeespoort Dam, South Africa. *Journal of Fish Biology*, 29(5):623–630, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:BRc**

- [1037] Anonymous. Book reviews. *Journal of Fish Biology*, 29(5):631–633, November 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whoriskey:1986:BSP**

- [1038] F. G. Whoriskey, G. J. Fitzgerald, and S. G. Reebst. The breeding-season population structure of three sympatric, territorial sticklebacks (Pisces: Gasterosteidae). *Journal of Fish Biology*, 29(6):635–648, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eastman:1986:RGE**

- [1039] J. T. Eastman and A. L. Devries. Renal glomerular evolution in Antarctic notothenioid fishes. *Journal of Fish Biology*, 29(6):649–662, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sloley:1986:BRI**

- [1040] B. D. Sloley, R. A. Cunjak, G. Power, and R. G. H. Downer. Book review: *The influence of sex and spawning on levels of tryptophan, serotonin and 5-hydroxyindoleacetic acid in the brains of wild brook trout, Salvelinus fontinalis*. *Journal of Fish Biology*, 29(6):663–669, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marcus:1986:FFH**

- [1041] O. Marcus. Food and feeding habits of *Ilisha africana* (Bloch) (Pisces: Clupeidae) off the Lagos coast, Nigeria. *Journal of Fish Biology*, 29(6):671–683, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Madhavi:1986:DMC**

- [1042] R. Madhavi. Distribution of metacercariae of *Centrocestus formosanus* (Trematoda: Heterophyidae) on the gills of *Aplocheilichthys panchax*. *Journal of Fish Biology*, 29(6):685–690, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dabrowski:1986:TTC**

- [1043] K. Dabrowski and K. Tsukamoto. Tetracycline tagging in coregonid embryos and larvae. *Journal of Fish Biology*, 29(6):691–698, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fischer-scherl:1986:LEM**

- [1044] Th. Fischer-scherl and R. Hoffmann. Light- and electron-microscope studies on the pseudobranch of the golden orfe, *Leuciscus idus* L. *Journal of Fish Biology*, 29(6):699–709, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1986:OGP**

- [1045] P. M. Hine, J. M. Wain, and D. M. Dunlop. Observations on granulocyte peroxidase in New Zealand freshwater eels, *Anguilla* species. *Journal of Fish Biology*, 29(6):711–720, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1986:LEM**

- [1046] P. M. Hine, J. M. Wain, N. C. Boustead, and D. M. Dunlop. Light and electron microscopic studies on the enzyme cytochemistry of leucocytes of eels, *Anguilla* species. *Journal of Fish Biology*, 29(6):721–735, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mudge:1986:SPC**

- [1047] S. M. Mudge and J. Davenport. Serum pigmentation in *Cyclopterus lumpus* L. *Journal of Fish Biology*, 29(6):737–745, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heap:1986:ASP**

- [1048] S. P. Heap and G. Goldspink. Alterations to the swimming performance of carp, *Cyprinus carpio*, as a result of temperature acclimation. *Journal of Fish Biology*, 29(6):747–753, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weng:1986:STD**

- [1049] H. T. Weng. Spatial and temporal distribution of whiting (Sillaginidae) in Moreton Bay, Queensland. *Journal of Fish Biology*, 29(6):755–764, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pitcher:1986:P**

- [1050] Tony Pitcher, Anne Magurran, and Dick Margetts. Preface. *Journal of Fish Biology*, 29(sA):v, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1986:LPP**

- [1051] Anonymous. List of papers presented at the Bangor symposium on the Behaviour of Fishes. *Journal of Fish Biology*, 29(sA):vii–x, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milinski:1986:RCR**

- [1052] M. Milinski. A review of competitive resource sharing under constraints in sticklebacks. *Journal of Fish Biology*, 29(sA):1–14, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grant:1986:TSS**

- [1053] J. W. A. Grant and D. L. G. Noakes. A test of a size-selective predation model with juvenile brook charr, *Salvelinus fontinalis*. *Journal of Fish Biology*, 29(sA):15–23, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bres:1986:NLO**

- [1054] M. Bres. A new look at optimal foraging behaviour; rule of thumb in the rainbow trout. *Journal of Fish Biology*, 29(sA):25–36, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Winfield:1986:ISA**

- [1055] I. J. Winfield. The influence of simulated aquatic macrophytes on the zooplankton consumption rate of juvenile roach, *Rutilus rutilus*, rudd, *Scardinius erythrophthalmus*, and perch, *Perca fluviatilis*. *Journal of Fish Biology*, 29(sA):37–48, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Holmes:1986:VCD**

- [1056] R. A. Holmes and R. N. Gibson. Visual cues determining prey selection by the turbot, *Scophthalmus maximus* L. *Journal of Fish Biology*, 29(sA):49–58, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pitcher:1986:DDE**

- [1057] T. J. Pitcher and J. R. Turner. Danger at dawn: experimental support for the twilight hypothesis in shoaling minnows. *Journal of Fish Biology*, 29(sA):59–70, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Glass:1986:LIT**

- [1058] C. W. Glass, C. S. Wardle, and W. R. Mojsiewicz. A light intensity threshold for schooling in the Atlantic mackerel, *Scomber scombrus*. *Journal of Fish Biology*, 29(sA):71–81, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pitcher:1986:SSB**

- [1059] T. J. Pitcher, A. E. Magurran, and J. R. Allan. Size-segregative behaviour in minnow shoals. *Journal of Fish Biology*, 29(sA):83–95, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Allan:1986:ISC**

- [1060] J. R. Allan. The influence of species composition on behaviour in mixed-species cyprinid shoals. *Journal of Fish Biology*, 29(sA):97–106, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baerends:1986:CFP**

- [1061] G. P. Baerends. On causation and function of the pre-spawning behaviour of cichlid fish. *Journal of Fish Biology*, 29(sA):107–121, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barlow:1986:MCM**

- [1062] G. W. Barlow. Mate choice in the monogamous and polychromatic Midas cichlid, *Cichlasoma citrinellum*. *Journal of Fish Biology*, 29(sA):123–133, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McKaye:1986:MCS**

- [1063] K. R. McKaye. Mate choice and size assortative pairing by the cichlid fishes of Lake Jiloá, Nicaragua. *Journal of Fish Biology*, 29(sA):135–150, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deCaprona:1986:PTC**

- [1064] M.-D. Crapon de Caprona. Are ‘preferences’ and ‘tolerances’ in cichlid mate choice important for speciation? *Journal of Fish Biology*, 29(sA):151–158, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**MaGurran:1986:DSB**

- [1065] A. E. MaGurran. The development of shoaling behaviour in the European minnow, *Phoxinus phoxinus*. *Journal of Fish Biology*, 29(sA):159–169, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1986:DFB**

- [1066] J. A. Brown. The development of feeding behaviour in the lumpfish, *Cyclopterus lumpus*. *Journal of Fish Biology*, 29(sA):171–178, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gomez-Laplaza:1986:TIS**

- [1067] L. M. Gómez-Laplaza and E. Morgan. Towards an isolation syndrome for the angelfish, *Pterophyllum scalare*. *Journal of Fish Biology*, 29(sA):179–187, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Katz:1986:MSS**

- [1068] H. M. Katz. Migrational swimming speeds of the American shad, *Alosa sapidissima*, in the Connecticut River, Massachusetts, U.S.A. *Journal of Fish Biology*, 29(sA):189–197, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Priede:1986:BAG**

- [1069] I. G. Priede and K. L. Smith, Jr. Behaviour of the abyssal grenadier, *Coryphaenoides yaquinae*, monitored using ingestible acoustic transmitters in the Pacific Ocean. *Journal of Fish Biology*, 29(sA):199–206, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Armstrong:1986:HRI**

- [1070] J. D. Armstrong. Heart rate as an indicator of activity, metabolic rate, food intake and digestion in pike, *Esox lucius*. *Journal of Fish Biology*, 29(sA):207–221, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**He:1986:TBA**

- [1071] P. He and C. S. Wardle. Tilting behaviour of the Atlantic mackerel, *Scomber scombrus*, at low swimming speeds. *Journal of Fish Biology*, 29(sA):223–232, December 1986. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Owusu-Frimpong:1987:BBP**

- [1072] M. Owusu-Frimpong. Breeding behavioural pattern of the lake fish *Tilapia discolor* Günther (Teleostei, Cichlidae) in captivity. *Journal of Fish Biology*, 30(1):1–5, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorogood:1987:AGR**

- [1073] J. Thorogood. Age and growth rate determination of southern bluefin tuna, *Thunnus maccoyii*, using otolith banding. *Journal of Fish Biology*, 30(1):7–14, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cousin:1987:OEA**

- [1074] J. C. B. Cousin, F. Baudin-Laurencin, and J. Gabaudan. Ontogeny of enzymatic activities in fed and fasting turbot, *Scophthalmus maximus* L. *Journal of Fish Biology*, 30(1):15–33, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Blaxhall:1987:EPL**

- [1075] P. C. Blaxhall and T. Doggett. Esterases and phosphatases in the leucocytes of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 30(1):35–40, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1987:LIA**

- [1076] A. D. Pickering and T. G. Pottinger. Lymphocytopenia and interrenal activity during sexual maturation in the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 30(1):41–50, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rasotto:1987:PSI**

- [1077] M. B. Rasotto, P. Cardellini, and E. Marconato. The problem of sexual inversion in the minnow, *Phoxinus phoxinus* (L.). *Journal of Fish Biology*, 30(1):51–57, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rambhaskar:1987:CHT**

- [1078] B. Rambhaskar and K. Srinivasa Rao. Comparative haematology of ten species of marine fish from visakhapatnam Coast. *Journal of Fish Biology*, 30(1):59–66, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Edwards:1987:BSL**

- [1079] R. R. C. Edwards and S. Shaher. Biometrics of *Sardinella longiceps* Val. in relation to upwelling in the Gulf of Aden. *Journal of Fish Biology*, 30(1):67–73, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sagua:1987:NSE**

- [1080] V. O. Sagua. On a new species of electric catfish from Kainji, Nigeria, with some observations on its biology. *Journal of Fish Biology*, 30(1):75–89, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lagardere:1987:FED**

- [1081] J. P. Lagardère. Feeding ecology and daily food consumption of common sole, *Solea vulgaris* Quensel, juveniles on the French Atlantic coast. *Journal of Fish Biology*, 30(1):91–104, January 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:DOW**

- [1082] Anonymous. Donald w. Jolly M rcvs. *Journal of Fish Biology*, 30(2):105, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Chao:1987:PTS**

- [1083] Nai-Hsien Chao, Wei-Chung Chao, Kuo-Chun Liu, and I-Chiu Liao. The properties of tilapia sperm and its cryopreservation. *Journal of Fish Biology*, 30(2):107–118, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Naesje:1987:FGA**

- [1084] T. F. Næsje, B. Jonsson, L. Klyve, and O. T. Sandlund. Food and growth of age-0 smelts, *Osmerus eperlanus*, in a Norwegian fjord lake. *Journal of Fish Biology*, 30(2):119–126, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mtada:1987:ITS**

- [1085] O. S. M. Mtada. The influence of thermal stratification on pelagic fish yields in Lake Kariba, Zambia/Zimbabwe. *Journal of Fish Biology*, 30(2):127–133, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cataldi:1987:SHM**

- [1086] E. Cataldi, S. Cataudella, G. Monaco, A. Rossi, and L. Tancioni. A study of the histology and morphology of the digestive tract of the sea-bream, *Sparus aurata*. *Journal of Fish Biology*, 30(2):135–145, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hickley:1987:FFR**

- [1087] P. Hickley and R. G. Bailey. Food and feeding relationships of fish in the Sudd swamps (River Nile, southern Sudan). *Journal of Fish Biology*, 30(2):147–159, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Romanello:1987:PLG**

- [1088] M. G. Romanello, P. A. Scapolo, S. Luprano, and F. Mascarello. Post-larval growth in the lateral white muscle of the eel, *Anguilla anguilla*. *Journal of Fish Biology*, 30(2):161–172, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morman:1987:RDG**

- [1089] R. H. Morman. Relationship of density to growth and metamorphosis of caged larval sea lampreys, *Petromyzon marinus* Linnaeus, in Michigan streams. *Journal of Fish Biology*, 30(2):173–181, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1987:GFH**

- [1090] E. J. Hyslop. The growth and feeding habits of *Clarias anguillaris* during their first season in the floodplain pools of the Sokoto-Rima river basin, Nigeria. *Journal of Fish Biology*, 30(2):183–192, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pankhurst:1987:SRC**

- [1091] N. W. Pankhurst, P. J. McMillan, and D. M. Tracey. Seasonal reproductive cycles in three commercially exploited fishes from the slope waters off New Zealand. *Journal of Fish Biology*, 30(2):193–211, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Abu-Hakima:1987:ARB**

- [1092] R. Abu-Hakima. Aspects of the reproductive biology of the grouper, *Epinephelus tawina* (Forsskål), in Kuwaiti waters. *Journal of Fish Biology*, 30(2):213–222, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Aa**

- [1093] Anonymous. Announcement. *Journal of Fish Biology*, 30(2):223, February 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Witthames:1987:AMC**

- [1094] P. R. Witthames and M. Greer Walker. An automated method for counting and sizing fish eggs. *Journal of Fish Biology*, 30(3):225–235, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1987:BRD**

- [1095] N. S. Weatherley. Book review: The diet and growth of 0-group dace, *Leuciscus leuciscus* (L.), and roach, *Rutilus rutilus* (L.), in a lowland river. *Journal of Fish Biology*, 30(3):237–247, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wood:1987:FRB**

- [1096] A. B. Wood and D. R. Jordan. Fertility of roach  $\times$  bream hybrids, *Rutilus rutilus* (L.)  $\times$  *Abramis brama* (L.), and their identification. *Journal of Fish Biology*, 30(3):249–261, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wang:1987:ITY**

- [1097] Y. L. Wang, R. K. Buodington, and S. I. Doroshov. Influence of temperature on yolk utilization by the white sturgeon, *Acipenser transmontanus*. *Journal of Fish Biology*, 30(3):263–271, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hvidsten:1987:PSS**

- [1098] N. A. Hvidsten and P. I. Møkkelgjerd. Predation on salmon smolts, *Salmo salar* L., in the estuary of the River Surna, Norway. *Journal of Fish Biology*, 30(3):273–280, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Hassan:1987:PIP**

- [1099] L. A. J. Al-Hassan, C. J. Webb, M. Giama, and P. J. Miller. Phosphoglucose isomerase polymorphism in the common goby, *Pomatoschistus microps* (Krøyer) (Teleostei Gobiidae), around the British Isles. *Journal of Fish Biology*, 30(3):281–298, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jobling:1987:IFP**

- [1100] M. Jobling. Influences of food particle size and dietary energy content on patterns of gastric evacuation in fish: test of a physiological model of gastric emptying. *Journal of Fish Biology*, 30(3):299–314, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hinterleitner:1987:DAO**

- [1101] S. Hinterleitner, U. Platzer, and W. Wieser. Development of the activities of oxidative, glycolytic and muscle enzymes during early larval life in three families of freshwater fish. *Journal of Fish Biology*, 30(3):315–326, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bruno:1987:SAT**

- [1102] D. W. Bruno. Serum agglutinating titres against *Renibacterium salmoninarum* the causative agent of bacterial kidney disease, in rainbow trout, *Salmo gairdneri* Richardson, and Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 30(3):327–334, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whoriskey:1987:SET**

- [1103] F. G. Whoriskey and R. J. Wootton. The swimming endurance of three-spine sticklebacks, *Gasterosteus aculeatus* L., from the Afon Rheidol,

Wales. *Journal of Fish Biology*, 30(3):335–339, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tort:1987:CVH**

- [1104] L. Tort, J. J. Watson, and I. G. Priede. Changes in in vitro heart performance in rainbow trout, *Salmo gairdneri* Richardson, infected with *Apatemon gracilis* (Digenea). *Journal of Fish Biology*, 30(3):341–347, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**LAbee-Lund:1987:FMR**

- [1105] J. H. L'Abée-Lund and L. A. Vøllestad. Feeding migration of roach, *Rutilus rutilus* (L.), in Lake Arungen, Norway. *Journal of Fish Biology*, 30(3):349–355, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sala:1987:PCC**

- [1106] R. Sala, S. Crespo, V. Martin, and O. Castell. Presence of chloride cells in gill filaments and lamellae of the skate *Torpedo marmorata*. *Journal of Fish Biology*, 30(3):357–361, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1987:PWQ**

- [1107] A. D. Pickering and T. G. Pottinger. Poor water quality suppresses the cortisol response of salmonid fish to handling and confinement. *Journal of Fish Biology*, 30(3):363–374, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Ab**

- [1108] Anonymous. Announcement. *Journal of Fish Biology*, 30(3):375, March 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Garg:1987:SEP**

- [1109] S. K. Garg. Seasonal effects of pinealectomy on testicular recrudescence and secretory activity of seminal vesicles in the catfish *Heteropneustes fossilis* (Bloch). *Journal of Fish Biology*, 30(4):377–387, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chambers:1987:CGA**

- [1110] J. Chambers. The cyprinodontiform gonopodium, with an atlas of the gonopodia of the fishes of the genus *Limia*. *Journal of Fish Biology*, 30(4):389–418, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bashirullah:1987:COT**

- [1111] A. K. M. Bashirullah and N. E. Rado. Co-occurrence of three species of Choricotyle (Monogenea: Diclidophoridae) in the grunt *Orthopristis ruber* and their host-specificity. *Journal of Fish Biology*, 30(4):419–422, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Segner:1987:RFS**

- [1112] H. Segner. Response of fed and starved roach, *Rutilus rutilus*, to sublethal copper contamination. *Journal of Fish Biology*, 30(4):423–437, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Getachew:1987:SHF**

- [1113] T. Getachew. A study on an herbivorous fish, *Oreochromis niloticus* L., diet and its quality in two Ethiopian Rift Valley lakes, Awasa and Zwai. *Journal of Fish Biology*, 30(4):439–449, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Peterson:1987:OBL**

- [1114] M. S. Peterson, D. E. Gustafson, Jr., and F. R. Moore. Orientation behaviour of *Lepomis macrochirus* Rafinesque to salinity fluctuations. *Journal of Fish Biology*, 30(4):451–458, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munro:1987:DCT**

- [1115] A. D. Munro and I. Singh. Diurnal changes in the territorial behaviour of the tilapia *Oreochromis mossambicus* (Peters). *Journal of Fish Biology*, 30(4):459–464, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1987:ECC**

- [1116] P. M. Hine and J. M. Wain. The enzyme cytochemistry and composition of elasmobranch granulocytes. *Journal of Fish Biology*, 30(4):465–475, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Foott:1987:SOI**

- [1117] J. S. Foott and R. P. Hedrick. Seasonal occurrence of the infectious stage of proliferative kidney disease (PKD) and resistance of rainbow trout, *Salmo gairdneri* Richardson, to reinfection. *Journal of Fish Biology*, 30(4):477–483, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thomas:1987:ISE**

- [1118] P. Thomas. Influence of some environmental variables on the ascorbic acid status of striped mullet, *Mugil cephalus* Linn., tissues. III. Effects of exposure to oil. *Journal of Fish Biology*, 30(4):485–494, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lindsay:1987:SAC**

- [1119] G. J. H. Lindsay. Seasonal activities of chitinase and chitobiase in the digestive tract and serum of cod, *Gadus morhua* (L.). *Journal of Fish Biology*, 30(4):495–500, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bromley:1987:EFT**

- [1120] P. J. Bromley. The effects of food type, meal size and body weight on digestion and gastric evacuation in turbot, *Scophthalmus maximus* L. *Journal of Fish Biology*, 30(4):501–512, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRa**

- [1121] Anonymous. Book reviews. *Journal of Fish Biology*, 30(4):513–517, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Ac**

- [1122] Anonymous. Addendum. *Journal of Fish Biology*, 30(4):517, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRb**

- [1123] Anonymous. Books received. *Journal of Fish Biology*, 30(4):517, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Ad**

- [1124] Anonymous. Announcement. *Journal of Fish Biology*, 30(4):519, April 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rousch:1987:EEC**

- [1125] R. Rösusch. Effect of experimental conditions on the stomach evacuation of *Coregonus lavaretus* L. *Journal of Fish Biology*, 30(5):521–531, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Schwanck:1987:LPS**

- [1126] E. Schwanck. Lunar periodicity in the spawning of *Tilapia mariae* in the Ethiop River, Nigeria. *Journal of Fish Biology*, 30(5):533–537, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Overnell:1987:LLM**

- [1127] J. Overnell, R. McIntosh, and T. C. Fletcher. The levels of liver metallothionein and zinc in plaice, *Pleuronectes platessa* L., during the breeding season, and the effect of oestradiol injection. *Journal of Fish Biology*, 30(5):539–546, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1987:CUEa**

- [1128] P. M. Hine and J. M. Wain. Composition and ultrastructure of elasmobranch granulocytes. I. Dogfishes (Squaliformes). *Journal of Fish Biology*, 30(5):547–556, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1987:CUEb**

- [1129] P. M. Hine and J. M. Wain. Composition and ultrastructure of elasmobranch granulocytes. II. Rays (Rajiformes). *Journal of Fish Biology*, 30(5):557–565, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1987:CUEc**

- [1130] P. M. Hine and J. M. Wain. Composition and ultrastructure of elasmobranch granulocytes. III. Sharks (Lamniformes). *Journal of Fish Biology*, 30(5):567–576, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dheer:1987:HHR**

- [1131] J. M. S. Dheer, T. R. Dheer, and C. L. Mahajan. Haematological and haematopoietic response to acid stress in an air-breathing freshwater fish, *Channa punctatus* Bloch. *Journal of Fish Biology*, 30(5):577–588, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goodall:1987:QHS**

- [1132] J. A. Goodall, M. F. Capra, and A. W. Blackshaw. Quantitative histology of the seasonal changes in the gonads of summer whiting, *Sillago ciliata*. *Journal of Fish Biology*, 30(5):589–595, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eiras:1987:OHB**

- [1133] J. C. Eiras. Occurrence of *Haemogregarina bigemina* (Protozoa: Apicomplexa) in *Blennius pholis* (Pisces: Blenniidae) along the Portuguese west coast. *Journal of Fish Biology*, 30(5):597–603, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bruslea:1987:SIH**

- [1134] S. Brusléa. Sex-inversion of the hermaphroditic, protogynous teleost *Coris julis* L. (Labridae). *Journal of Fish Biology*, 30(5):605–616, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1987:SGD**

- [1135] R. M. Wright and N. Giles. The survival, growth and diet of pike fry, *Esox lucius* L., stocked at different densities in experimental ponds. *Journal of Fish Biology*, 30(5):617–629, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Giles:1987:CBR**

- [1136] N. Giles. A comparison of the behavioural responses of parasitized and non-parasitized three-spined sticklebacks, *Gasterosteus aculeatus* L., to progressive hypoxia. *Journal of Fish Biology*, 30(5):631–638, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRc**

- [1137] Anonymous. Book reviews. *Journal of Fish Biology*, 30(5):639–641, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Ae**

- [1138] Anonymous. Announcement. *Journal of Fish Biology*, 30(5):642, May 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burton:1987:EIN**

- [1139] M. P. Burton and D. R. Idler. An experimental investigation of the non-reproductive, post-mature state in winter flounder. *Journal of Fish Biology*, 30(6):643–650, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rohde:1987:DPS**

- [1140] K. Rohde. Different populations of *Scomber australasicus* in New Zealand and south-eastern Australia, demonstrated by a simple method using monogenean sclerites. *Journal of Fish Biology*, 30(6):651–657, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Wales:1987:BPE**

- [1141] N. A. M. Wales and T. Gaunt. Blood pressure, electrolyte composition and renal studies of pike, *Esox lucius*, following administration of salmon calcitonin. *Journal of Fish Biology*, 30(6):659–665, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hilden:1987:SLP**

- [1142] M. Hildén and J.-P. Hirvi. The survival of larval perch, *Perca fluviatilis* L., under different combinations of acidity and duration of acid conditions, analysed with a generalized linear model. *Journal of Fish Biology*, 30(6):667–677, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ward:1987:MAF**

- [1143] G. Ward and G. J. FitzGerald. Male aggression and female mate choice in the threespine stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 30(6):679–690, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dalzell:1987:NBS**

- [1144] P. Dalzell. Notes on the biology of *Spratelloides lewisi* (Wongratana, 1983), a recently described species of sprat from Papua New Guinea waters. *Journal of Fish Biology*, 30(6):691–700, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1987:CCP**

- [1145] A. D. Pickering and T. G. Pottinger. Crowding causes prolonged leucopenia in salmonid fish, despite interrenal acclimation. *Journal of Fish Biology*, 30(6):701–712, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hansen:1987:MFA**

- [1146] L. P. Hansen, K. B. Døsving, and B. Jonsson. Migration of farmed adult Atlantic salmon with and without olfactory sense, released on the Norwegian coast. *Journal of Fish Biology*, 30(6):713–721, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nakanishi:1987:KTI**

- [1147] T. Nakanishi. Kinetics of transfer of immunity by immune leucocytes and PFC response to HRBC in isogenic ginbuna crucian carp. *Journal of Fish Biology*, 30(6):723–729, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yan:1987:SMM**

- [1148] H. Y. Yan. Size at maturity in male *Gambusia heterochir*. *Journal of Fish Biology*, 30(6):731–741, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Perry:1987:POE**

- [1149] D. M. Perry. A procedure for obtaining erythrocytes from larval fish for cytological study and a description of larval blood of red hake, *Urophycis chuss* (Walbaum) and Atlantic mackerel, *Scomber scombrus* (Linnaeus). *Journal of Fish Biology*, 30(6):743–748, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yu:1987:CBR**

- [1150] K. L. Yu and N. Y. S. Woo. Changes in blood respiratory properties and cardiovascular function during acute exposure to hypoxic water in an air-breathing teleost, *Channa maculata*. *Journal of Fish Biology*, 30(6):749–760, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:Af**

- [1151] Anonymous. Announcement. *Journal of Fish Biology*, 30(6):761, June 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hislop:1987:OSD**

- [1152] J. R. G. Hislop and M. A. Bell. Observations on the size, dry weight and energy content of the eggs of some demersal fish species from British marine waters. *Journal of Fish Biology*, 31(1):1–20, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Plisetskaya:1987:PIL**

- [1153] E. M. Plisetskaya, E. M. Donaldson, and H. M. Dye. Plasma insulin levels during the spawning migration of the pink salmon, *Oncorhynchus gorbuscha*. *Journal of Fish Biology*, 31(1):21–26, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Macdonald:1987:EME**

- [1154] N. L. Macdonald. An electron microscopic examination of the gastrointestinal epithelium in Dover sole, *Solea solea* (L.). *Journal of Fish Biology*, 31(1):27–36, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Giles:1987:PRR**

- [1155] N. Giles. Predation risk and reduced foraging activity in fish: experiments with parasitized and non-parasitized three-spined sticklebacks, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 31(1):37–44, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Talesara:1987:HSM**

- [1156] C. L. Talesara and A. J. Urfi. A histophysiological study of muscle differentiation and growth in the common carp, *Cyprinus carpio* var. communis. *Journal of Fish Biology*, 31(1):45–54, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gibson:1987:FRD**

- [1157] R. N. Gibson and I. A. Ezzi. Feeding relationships of a demersal fish assemblage on the west coast of Scotland. *Journal of Fish Biology*, 31(1):55–69, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wickins:1987:ESC**

- [1158] J. F. Wickins. Effects of size, culling and social history on growth of cultured elvers, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 31(1):71–82, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mackenzie:1987:LTC**

- [1159] K. Mackenzie. Long-term changes in the prevalence of two helminth parasites (Cestoda: Trypanorhyncha) infecting marine fish. *Journal of Fish Biology*, 31(1):83–87, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Taylor:1987:EEJ**

- [1160] P. B. Taylor. Experimental evidence for juvenile Chinook salmon, *Oncorhynchus tshawytscha* Walbaum, orientation at night and in sunlight after a 7° change in latitude. *Journal of Fish Biology*, 31(1):89–111, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berg:1987:MST**

- [1161] O. K. Berg and M. Berg. Migrations of sea trout, *Salmo trutta* L., from the Vardnes river in northern Norway. *Journal of Fish Biology*, 31(1):113–121, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aho:1987:CPT**

- [1162] J. M. Aho and C. R. Kennedy. Circulation pattern and transmission dynamics of the supra-population of the nematode *Cystidicoloides tenuissima* (Zeder) in the River Swincombe, England. *Journal of Fish Biology*, 31(1):123–141, July 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Myers:1987:MAA**

- [1163] R. A. Myers and J. A. Hutchings. Mating of anadromous Atlantic salmon, *Salmo salar* L., with mature male parr. *Journal of Fish Biology*, 31(2):143–146, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Doggett:1987:CLM**

- [1164] T. A. Doggett, A. B. Wrathmell, and J. E. Harris. A cytochemical and light microscopical study of the peripheral blood leucocytes of *Oreochromis mossambicus*, *Cichlidae*. *Journal of Fish Biology*, 31(2):147–153, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rossi:1987:OMY**

- [1165] R. Rossi, M. Bianchini, A. Carrieri, and P. Franzoi. Observations on movements of yellow eels, *Anguilla anguilla* L., after displacement from coastal waters to sea. *Journal of Fish Biology*, 31(2):155–164, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yu:1987:MAA**

- [1166] K. L. Yu and N. Y. S. Woo. Metabolic adjustments of an air-breathing teleost, *Channa maculata*, to acute and prolonged exposure to hypoxic water. *Journal of Fish Biology*, 31(2):165–175, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatner:1987:APS**

- [1167] M. F. Tatner, A. Adams, and W. Leschen. An analysis of the primary and secondary antibody response in intact and thymectomized rainbow trout, *Salmo gairdneri* Richardson, to human gamma globulin and *Aeromonas salmonicida*. *Journal of Fish Biology*, 31(2):177–195, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thuvander:1987:PCB**

- [1168] A. Thuvander, L. Norrgren, and C. Fossum. Phagocytic cells in blood from rainbow trout, *Salmo gairdneri* (Richardson), characterized by flow

cytometry and electron microscopy. *Journal of Fish Biology*, 31(2):197–208, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sadler:1987:SEG**

- [1169] K. Sadler and S. Lynam. Some effects on the growth of brown trout from exposure to aluminium at different pH levels. *Journal of Fish Biology*, 31(2):209–219, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anderson:1987:UAC**

- [1170] T. A. Anderson. Utilization of algal cell fractions by the marine herbivore the luderick, *Girella tricuspidata* (Quoy and Gaimard). *Journal of Fish Biology*, 31(2):221–228, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rimmer:1987:FMD**

- [1171] D. W. Rimmer and W. J. Wiebe. Fermentative microbial digestion in herbivorous fishes. *Journal of Fish Biology*, 31(2):229–236, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bray:1987:SHP**

- [1172] R. A. Bray. A study of the helminth parasites of *Anarhichas lupus* (Perciformes: Anarhichadidae) in the North Atlantic. *Journal of Fish Biology*, 31(2):237–264, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Knights:1987:ABG**

- [1173] B. Knights. Agonistic behaviour and growth in the European eel, *Anguilla anguilla* L., in relation to warm-water aquaculture. *Journal of Fish Biology*, 31(2):265–276, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Howell:1987:ISE**

- [1174] B. R. Howell and A. V. M. Canario. The influence of sand on the estimation of resting metabolic rate of juvenile sole, *Solea solea* (L.). *Journal of Fish Biology*, 31(2):277–280, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1987:VTD**

- [1175] P. A. Henderson. The vertical and transverse distribution of larval herring in the River Blackwater estuary, Essex. *Journal of Fish Biology*, 31

(2):281–290, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Eiras:1987:DHB**

- [1176] J. C. Eiras. Detection of *Haemogregarina bigemina* (Protozoa: Apicomplexa) infection in fish erythrocytes by phase-contrast microscopy. *Journal of Fish Biology*, 31(2):291–292, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRd**

- [1177] Anonymous. Book reviews. *Journal of Fish Biology*, 31(2):293–300, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRe**

- [1178] Anonymous. Books received. *Journal of Fish Biology*, 31(2):300, August 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cala:1987:ARC**

- [1179] P. Cala. Aerial respiration in the catfish, *Eremophilus mutisii* (Trichomycteridae, Siluriformes), in the Rio Bogota Basin, Colombia. *Journal of Fish Biology*, 31(3):301–303, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rehnberg:1987:OSC**

- [1180] B. G. Rehnberg and C. B. Schreck. Olfactory sensitivity of Coho salmon, *Oncorhynchus kisutch* (Walbaum): can salinity play a role? *Journal of Fish Biology*, 31(3):305–307, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scrimgeour:1987:DFR**

- [1181] G. J. Scrimgeour and M. J. Winterbourn. Diet, food resource partitioning and feeding periodicity of two riffle-dwelling fish species in a New Zealand river. *Journal of Fish Biology*, 31(3):309–324, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rosenblum:1987:GME**

- [1182] P. M. Rosenblum, J. Pudney, and I. P. Callard. Gonadal morphology, enzyme histochemistry and plasma steroid levels during the annual reproductive cycle of male and female brown bullhead catfish, *Ictalurus nebulosus* Lesueur. *Journal of Fish Biology*, 31(3):325–341, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Minchin:1987:FLH**

- [1183] D. Minchin. Fishes of the Lough Hyne marine reserve. *Journal of Fish Biology*, 31(3):343–352, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davies:1987:CSM**

- [1184] P. E. Davies and R. D. Sloane. Characteristics of the spawning migrations of brown trout, *Salmo trutta* L., and rainbow trout, *S. gairdneri* Richardson, in Great Lake, Tasmania. *Journal of Fish Biology*, 31(3):353–373, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bennett:1987:ESEa**

- [1185] R. O. Bennett and R. E. Wolke. The effect of sublethal endrin exposure on rainbow trout, *Salmo gairdneri* Richardson. I. Evaluation of serum cortisol concentrations and immune responsiveness. *Journal of Fish Biology*, 31(3):375–385, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bennett:1987:ESEb**

- [1186] R. O. Bennett and R. E. Wolke. The effect of sublethal endrin exposure on rainbow trout, *Salmo gairdneri* Richardson. II. The effect of altering serum cortisol concentrations on the immune response. *Journal of Fish Biology*, 31(3):387–394, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rhodes:1987:ECH**

- [1187] L. D. Rhodes, M. S. Myers, W. D. Gronlund, and B. B. McCain. Epizootic characteristics of hepatic and renal lesions in English sole, *Parophrys vetulus*, from Puget Sound. *Journal of Fish Biology*, 31(3):395–407, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Schulz:1987:MUT**

- [1188] U. Schulz and R. Berg. The migration of ultrasonic-tagged bream, *Abramis brama* (L), in Lake Constance (Bodensee–Untersee). *Journal of Fish Biology*, 31(3):409–414, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1987:FPS**

- [1189] A. W. H. Turnpenny, K. Sadler, R. J. Aston, A. G. P. Milner, and S. Lynam. The fish populations of some streams in Wales and northern

England in relation to acidity and associated factors. *Journal of Fish Biology*, 31(3):415–434, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Micale:1987:GCC**

- [1190] V. Micale, F. Perdichizzi, and G. Santangelo. The gonadal cycle of captive white bream, *Diplodus sargus* (L.). *Journal of Fish Biology*, 31(3):435–440, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Huang:1987:STT**

- [1191] C. M. Huang, H. J. Cheng, S. L. Chang, N. H. Chao, and I. C. Liao. Siamese twins in tilapia. *Journal of Fish Biology*, 31(3):441–442, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1987:APF**

- [1192] E. A. R. Brown and D. B. C. Scott. Abnormal pelvic fins in Scottish powan, *Coregonus lavaretus* (L.) (Salmonidae, Coregoninae). *Journal of Fish Biology*, 31(3):443–444, September 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stene:1987:LMS**

- [1193] A. Stene. Light microscopical studies of chromosomes in embryos of cod, *Gadus morhua* L. *Journal of Fish Biology*, 31(4):445–450, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrett:1987:NGS**

- [1194] N. R. Merrett and J. G. Nielsen. A new genus and species of the family *Ipnopidae* (Pisces, Teleostei) from the eastern North Atlantic, with notes on its ecology. *Journal of Fish Biology*, 31(4):451–464, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brodeur:1987:DFC**

- [1195] R. D. Brodeur and W. G. Pearcy. Diel feeding chronology, gastric evacuation and estimated daily ration of juvenile Coho salmon, *Oncorhynchus kisutch* (Walbaum), in the coastal marine environment. *Journal of Fish Biology*, 31(4):465–477, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hall:1987:MDR**

- [1196] S. J. Hall. Maximum daily ration and the pattern of food consumption in haddock, *Melanogrammus aeglefinus* (L.), and dab, *Limanda limanda*



(L.). *Journal of Fish Biology*, 31(4):479–491, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cunjak:1987:FES**

- [1197] R. A. Cunjak and G. Power. The feeding and energetics of stream-resident trout in winter. *Journal of Fish Biology*, 31(4):493–511, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morris:1987:TCA**

- [1198] K. H. Morris and P. S. Maitland. A trap for catching adult lampreys (Petromyzonidae) in running water. *Journal of Fish Biology*, 31(4):513–516, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chubb:1987:KSC**

- [1199] J. C. Chubb, D. W. Pool, and C. J. Veltkamp. A key to the species of cestodes (tapeworms) parasitic in British and Irish freshwater fishes. *Journal of Fish Biology*, 31(4):517–543, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ramnarine:1987:IRS**

- [1200] I. W. Ramnarine, J. M. Pirie, A. D. F. Johnstone, and G. W. Smith. The influence of ration size and feeding frequency on ammonia excretion by juvenile Atlantic cod, *Gadus morhua* L. *Journal of Fish Biology*, 31(4):545–559, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sayer:1987:RIG**

- [1201] M. D. J. Sayer and J. Davenport. The relative importance of the gills to ammonia and urea excretion in five seawater and one freshwater teleost species. *Journal of Fish Biology*, 31(4):561–570, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1987:LTS**

- [1202] C. R. Kennedy. Long-term stability in the population levels of the eye-fluke *Tyloodelphys podicipina* (Digenea: Diplostomatidae) in perch. *Journal of Fish Biology*, 31(4):571–581, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**White:1987:BCK**

- [1203] R. W. G. White, Y. A. E. Bick, and Fu Wenqing. Brief communications: Karyology of the genus *Paragalaxias* (Pisces, Salmoniformes,

Galaxiidae). *Journal of Fish Biology*, 31(4):583–585, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Williamson:1987:VDP**

- [1204] G. R. Williamson. Vertical drifting position of glass eels, *Anguilla rostrata*, off Newfoundland. *Journal of Fish Biology*, 31(4):587–588, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRf**

- [1205] Anonymous. Book reviews. *Journal of Fish Biology*, 31(4):589–590, October 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zaman:1987:OCC**

- [1206] Z. Zaman and T. S. Leong. Occurrence of the caryophyllid cestode *Lytocestus parvulus* Furtado, 1963 in *Clarias batrachus* (L.) in a tropical environment, Kedah, Malaysia. *Journal of Fish Biology*, 31(5):591–596, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Carbone:1987:CSD**

- [1207] P. Carbone, R. Vitturi, E. Catalano, and M. Macaluso. Chromosome sex determination and Y-autosome fusion in *Blennius tentacularis* Brunnich, 1765 (Pisces, Blennidae). *Journal of Fish Biology*, 31(5):597–602, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marshall:1987:GMI**

- [1208] B. E. Marshall. Growth and mortality of the introduced Lake Tanganyika clupeid, *Limnothrissa miodon*, in Lake Kariba. *Journal of Fish Biology*, 31(5):603–615, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gehrke:1987:CRM**

- [1209] P. C. Gehrke. Cardio-respiratory morphometrics of spangled perch, *Leiopotherapon unicolor* (Günther, 1859), (Percoidei, Teraponidae). *Journal of Fish Biology*, 31(5):617–623, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Howes:1987:PBA**

- [1210] G. J. Howes. The palatine bone and its associations in gadoid fishes. *Journal of Fish Biology*, 31(5):625–637, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Atkinson:1987:BPA**

- [1211] R. J. A. Atkinson, B. Pelster, C. R. Bridges, A. C. Taylor, and S. Morris. Behavioural and physiological adaptations to a burrowing lifestyle in the snake blenny, *Lumpenus lampretaeformis*, and the red band-fish, *Cepola rubescens*. *Journal of Fish Biology*, 31(5):639–659, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sagar:1987:PPR**

- [1212] P. M. Sagar and G. J. Glova. Prey preferences of a riverine population of juvenile Chinook salmon, *Oncorhynchus tshawytscha*. *Journal of Fish Biology*, 31(5):661–673, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pipe:1987:ETD**

- [1213] R. K. Pipe and P. Walker. The effect of temperature on development and hatching of scud, *Trachurus trachurus* L., eggs. *Journal of Fish Biology*, 31(5):675–682, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barkman:1987:RDG**

- [1214] R. C. Barkman and D. A. Bengtson. The record of daily growth in otoliths of Atlantic silversides, *Menidia menidia*, from field and laboratory. *Journal of Fish Biology*, 31(5):683–695, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bengtson:1987:RBM**

- [1215] D. A. Bengtson, R. C. Barkman, and W. J. Berry. Relationships between maternal size, egg diameter, time of spawning season, temperature, and length at hatch of Atlantic silverside, *Menidia menidia*. *Journal of Fish Biology*, 31(5):697–704, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munshi:1987:MOP**

- [1216] J. S. D. Munshi and G. M. Hughes. Microvascular organization of the pseudobranch and carotid labyrinth of two species of air-breathing teleostean fishes. *Journal of Fish Biology*, 31(5):705–714, November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lang:1987:MPP**

- [1217] C. Lang. Mortality of perch, *Perca fluviatilis* L., estimated from the size and abundance of egg strands. *Journal of Fish Biology*, 31(5):715–720,

November 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crivelli:1987:BBF**

- [1218] A. J. Crivelli and F. Dupont. Biometrical and biological features of *Alburnus alburnus* × *Rutilus rubilio* natural hybrids from Lake Mikri Prespa, northern Greece. *Journal of Fish Biology*, 31(6):721–733, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barron:1987:TDC**

- [1219] M. G. Barron, B. D. Tarr, and W. L. Hayton. Temperature-dependence of cardiac output and regional blood flow in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 31(6):735–744, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1987:ABH**

- [1220] E. J. Hyslop. Aspects of the biology of *Hemichromis bimaculatus* from a small stream in Nigeria. *Journal of Fish Biology*, 31(6):745–751, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leuven:1987:IAE**

- [1221] R. S. E. W. Leuven and F. G. F. Oyen. Impact of acidification and eutrophication on the distribution of fish species in shallow and lentic soft waters of The Netherlands: an historical perspective. *Journal of Fish Biology*, 31(6):753–774, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Livingston:1987:MSS**

- [1222] M. E. Livingston. Morphological and sensory specializations of five New Zealand flatfish species, in relation to feeding behaviour. *Journal of Fish Biology*, 31(6):775–795, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bianco:1987:UTD**

- [1223] P. G. Bianco, A. M. Bullock, P. J. Miller, and F. R. Roubal. A unique teleost dermal organ in a new European genus of fishes (Teleostei: Gobioidaei). *Journal of Fish Biology*, 31(6):797–803, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brewster:1987:EMC**

- [1224] B. Brewster. Eye migration and cranial development during flatfish metamorphosis: a reappraisal (Teleostei: Pleuronectiformes). *Journal of Fish*

*Biology*, 31(6):805–833, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Douglas:1987:OLD**

- [1225] R. H. Douglas. Ocular lens diameter as an indicator of age in brown trout, *Salmo trutta*. *Journal of Fish Biology*, 31(6):835–836, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:BRg**

- [1226] Anonymous. Book reviews. *Journal of Fish Biology*, 31(6):837–841, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1987:PR**

- [1227] Anonymous. Publications received. *Journal of Fish Biology*, 31(6):841, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jurd:1987:HFR**

- [1228] R. D. Jurd. Hypersensitivity in fishes: a review. *Journal of Fish Biology*, 31(sA):1–7, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ingram:1987:HAS**

- [1229] G. A. Ingram. Haemolytic activity in the serum of brown trout, *Salmo trutta*. *Journal of Fish Biology*, 31(sA):9–17, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Arkoosh:1987:EEA**

- [1230] M. R. Arkoosh and S. L. Kaattari. Effect of early aflatoxin B<sub>1</sub> exposure on in vivo and in vitro antibody responses in rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 31(sA):19–22, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Doggett:1987:OGA**

- [1231] T. A. Doggett and J. E. Harris. The ontogeny of gut-associated lymphoid tissue in *Oreochromismossambicus*. *Journal of Fish Biology*, 31(sA):23–27, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kaastrup:1987:DSM**

- [1232] P. Kaastrup and V. Hørlyck. Development of a simple method to optimize the conditions for producing gynogenetic offspring, using albino

rainbow trout, *Salmo gairdneri* Richardson, females as an indicator for gynogenesis. *Journal of Fish Biology*, 31(sA):29–33, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nakanishi:1987:HAT**

- [1233] T. Nakanishi. Histocompatibility analyses in tetraploids induced from clonal triploid crucian carp and in gynogenetic diploid goldfish. *Journal of Fish Biology*, 31(sA):35–40, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Finco-Kent:1987:PCN**

- [1234] D. Finco-Kent and R. L. Thune. Phagocytosis by catfish neutrophils. *Journal of Fish Biology*, 31(sA):41–49, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chung:1987:ART**

- [1235] S. Chung and C. J. Secombes. Activation of rainbow trout macrophages. *Journal of Fish Biology*, 31(sA):51–56, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Siwicki:1987:PAN**

- [1236] A. Siwicki and M. Studnicka. The phagocytic ability of neutrophils and serum lysozyme activity in experimentally infected carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 31(sA):57–60, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wishkovsky:1987:VSP**

- [1237] A. Wishkovsky, B. S. Roberson, and F. M. Hetrick. In vitro suppression of the phagocytic response of fish macrophages by tetracyclines. *Journal of Fish Biology*, 31(sA):61–65, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cossarini-Dunier:1987:EPA**

- [1238] M. Cossarini-Dunier. Effects of the pesticides atrazine and lindane and of manganese ions on cellular immunity of carp, *Cyprinus carpio*. *Journal of Fish Biology*, 31(sA):67–73, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kranz:1987:ESC**

- [1239] H. Kranz and J. Gercken. Effects of sublethal concentrations of potassium dichromate on the occurrence of splenic melano-macrophage centres in juvenile plaice, *Pleuronectes platessa*, L. *Journal of Fish Biology*, 31

(sA):75–80, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fletcher:1987:MIE**

- [1240] T. C. Fletcher and A. White. Metabolic and immunological effects of endotoxin in the plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 31(sA):81–85, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kitao:1987:IAP**

- [1241] T. Kitao, T. Yoshida, D. P. Anderson, O. W. Dixon, and A. Blanch. Immunostimulation of antibody-producing cells and humoral antibody to fish bacterins by a biological response modifier. *Journal of Fish Biology*, 31(sA):87–91, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Salomoni:1987:EDS**

- [1242] C. Salomoni, M. Fiorentino, and D. L. Palenzona. Effects of diet, sham-immunization and bleeding on the immune response kinetics for two strains of *Cyprinus carpio*. *Journal of Fish Biology*, 31(sA):93–99, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wishkovsky:1987:IIB**

- [1243] A. Wishkovsky and R. R. Avtalion. Induction of immunosuppression to bacterial antigens in carp, *Cyprinus carpio*. *Journal of Fish Biology*, 31(sA):101–106, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rowley:1987:PSE**

- [1244] A. F. Rowley, S. E. Barrow, and T. C. Hunt. Preliminary studies on eicosanoid production by fish leucocytes, using GC-mass spectrometry. *Journal of Fish Biology*, 31(sA):107–111, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Angelidis:1987:SRT**

- [1245] P. Angelidis, F. Baudin-Laurencin, and P. Youinou. Stress in rainbow trout, *Salmo gairdneri*: effects upon phagocyte chemiluminescence, circulating leucocytes and susceptibility to *Aeromonas salmonicida*. *Journal of Fish Biology*, 31(sA):113–122, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thomas:1987:ECI**

- [1246] P. Thomas and D. H. Lewis. Effects of cortisol on immunity in red drum, *Sciaenops ocellatus*. *Journal of Fish Biology*, 31(sA):123–127, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kaattari:1987:CMG**

- [1247] S. L. Kaattari and R. A. Tripp. Cellular mechanisms of glucocorticoid immunosuppression in salmon. *Journal of Fish Biology*, 31(sA):129–132, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pourreau:1987:MMP**

- [1248] C. N. Pourreau, M. B. H. Koopman, G. F. R. Hendriks, D. Evenberg, and W. B. van Muiswinkel. Modulation of the mitogenic PHA response of carp, *Cyprinus carpio* L., by extracellular products of *Aeromonas salmonicida*. *Journal of Fish Biology*, 31(sA):133–143, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vogelbein:1987:SDM**

- [1249] W. K. Vogelbein, J. W. Fournie, and R. M. Overstreet. Sequential development and morphology of experimentally induced hepatic melanomacrophage centres in *Rivulus marmoratus*. *Journal of Fish Biology*, 31(sA):145–153, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laudan:1987:IEM**

- [1250] R. Laudan, J. S. Stolen, and A. Cali. The immunomodulating effect of the microsporidan *Glugea stephani* on the humoral response and immunoglobulin levels in winter flounder, *Pseudopleuronectes americanus*. *Journal of Fish Biology*, 31(sA):155–160, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Schmale:1987:IRB**

- [1251] M. C. Schmale and E. C. Mckinney. Immune responses in the bicolor damselfish, *Pomacentrus partitus*, and their potential role in the development of neurogenic tumours. *Journal of Fish Biology*, 31(sA):161–166, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thompson:1987:CTN**

- [1252] J. S. Thompson, A. A. I. Kostiala, and M. Miettinen. Cutaneous tumour of northern pike *Esox lucius* L.: evidence for a monocytic neo-



plasm. *Journal of Fish Biology*, 31(sA):167–173, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wood:1987:IRT**

- [1253] B. P. Wood and R. A. Matthews. The immune response of the thick-lipped grey mullet, *Chelon labrosus* (Risso, 1826), to metacercarial infections of *Cryptocotyle lingua* (Creplin, 1825). *Journal of Fish Biology*, 31(sA):175–183, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whyte:1987:CDD**

- [1254] S. K. Whyte, J. C. Allan, C. J. Secombes, and L. H. Chappell. Cercariae and diplostomules of *Diplostomum spathaceum* (Digenea) elicit an immune response in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 31(sA):185–190, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turaga:1987:BKD**

- [1255] P. Turaga, G. Wiens, and S. Kaattari. Bacterial kidney disease: the potential role of soluble protein antigen(s). *Journal of Fish Biology*, 31(sA):191–194, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Grayson:1987:EIA**

- [1256] T. H. Grayson, R. J. Williams, A. B. Wrathmell, C. B. Munn, and J. E. Harris. Effects of immunopotentiating agents on the immune response of rainbow trout, *Salmo gair dneri* Richardson, to ERM vaccine. *Journal of Fish Biology*, 31(sA):195–202, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clark:1987:VRI**

- [1257] T. G. Clark, H. W. Dickerson, J. B. Gratzek, and R. C. Findly. In vitro response of *Ichthyophthirius multifiliis* to sera from immune channel catfish. *Journal of Fish Biology*, 31(sA):203–208, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zapata:1987:EME**

- [1258] A. G. Zapata, M. Torroba, F. Alvarez, D. P. Anderson, O. W. Dixon, and M. Wisniewski. Electron microscopic examination of antigen uptake by salmonid gill cells after bath immunization with a bacterin. *Journal of Fish Biology*, 31(sA):209–217, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mclean:1987:IPA**

- [1259] E. Mclean and R. Ash. Intact protein (antigen) absorption in fishes: mechanism and physiological significance. *Journal of Fish Biology*, 31(sA):219–223, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1987:PMU**

- [1260] A. M. Smith, O. L. Goldring, and G. Dear. The production and methods of use of polyclonal antisera to the pathogenic organisms *Aeromonas salmonicida*, *Yersinia ruckeri* and *Renibacterium salmoninarum*. *Journal of Fish Biology*, 31(sA):225–226, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mcdowall:1987:SCC**

- [1261] A. A. Mcdowall, L. J. Healey, and M. J. Manning. Separation of carp, *Cyprinus carpio* L., pronephric cells on discontinuous bovine serum albumin density gradients. *Journal of Fish Biology*, 31(sA):227–229, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**O'Neill:1987:IRA**

- [1262] J. G. O'Neill, M. G. White, T. A. Sims, and D. L. Barber. The inflammatory response of the Antarctic silverfish, *Pleuragramma antarcticum* Boulenger, 1902, to a plerocercoid (species unknown) infestation. *Journal of Fish Biology*, 31(sA):231–232, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bigaj:1987:LOG**

- [1263] J. Bigaj, J. Dulak, and B. Plytycz. Lymphoid organs of *Gasterosteus aculeatus*. *Journal of Fish Biology*, 31(sA):233–234, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Herraez:1987:TII**

- [1264] M. P. Herraez and A. Zapata. Trapping of intraperitoneal-injected *Yersinia ruckeri* in the lymphoid organs of *Carassius auratus*: the role of melano-macrophage centres. *Journal of Fish Biology*, 31(sA):235–237, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Parkinson:1987:CLT**

- [1265] C. Parkinson and C. Agius. A cell line from the tilapia *Oreochromis spilurus* Günther. *Journal of Fish Biology*, 31(sA):239–240, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clayton:1987:SIR**

- [1266] G. M. Clayton and D. J. Price. Standardization of infection and response to white spot, *Ichthyophthirius multifiliis*, in fish. *Journal of Fish Biology*, 31(sA):241–242, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wishkovsky:1987:EFA**

- [1267] A. Wishkovsky, N. Garber, and R. R. Avtalion. The effect of fish age on the mortality caused by selected fish pathogens. *Journal of Fish Biology*, 31(sA):243–244, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Siwicki:1987:IAL**

- [1268] A. Siwicki. Immunomodulating activity of levamisole in carp spawners, *Cyprinus carpio* L. *Journal of Fish Biology*, 31(sA):245–246, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Angelidis:1987:LIR**

- [1269] P. Angelidis, F. Baudin-Laurencin, C. Quentel, and P. Youinou. Lower immune response induced by PKD. *Journal of Fish Biology*, 31(sA):247–250, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Walczak:1987:PFM**

- [1270] B. Z. Walczak, B. R. Blunt, and P. V. Hodson. Phagocytic function of monocytes and haematological changes in rainbow trout injected intraperitoneally with benzo(a)-pyrene (B(a)P) and benzo(a)anthracene (B(a)A). *Journal of Fish Biology*, 31(sA):251–253, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mangunwiryo:1987:PIP**

- [1271] H. Mangunwiryo and C. Agius. Pathogenicity of infectious pancreatic necrosis (IPN) virus to tilapia and its immune response. *Journal of Fish Biology*, 31(sA):255–256, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Daud:1987:EIC**

- [1272] H. M. Daud and C. Agius. Experimental infection of common carp, *Cyprinus carpio* L., by infectious pancreatic necrosis (IPN) virus. *Journal of Fish Biology*, 31(sA):257–258, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alvarez-Pellitero:1987:SBP**

- [1273] P. Alvarez-Pellitero and R. M. Pintó. Some blood parameters in sea bass, *Dicentrarchus labrax*, infected by bacteria, virus and parasites. *Journal of Fish Biology*, 31(sA):259–261, December 1987. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bianco:1988:LCL**

- [1274] P. G. Bianco. *Leuciscus cephalus* (Linnaeus), with records of fingerling adult males, *Leuciscus plemobipunctatus* (Stephanidis) and their hybrids from western Greece. *Journal of Fish Biology*, 32(1):1–16, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Korwin-Kossakowski:1988:LDC**

- [1275] M. Korwin-Kossakowski. Larval development of carp, *Cyprinus carpio* L., in acidic water. *Journal of Fish Biology*, 32(1):17–26, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Field-Dodgson:1988:SCD**

- [1276] M. S. Field-Dodgson. Size characteristics and diet of emergent Chinook salmon in a small, stable, New Zealand stream. *Journal of Fish Biology*, 32(1):27–40, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Delbeek:1988:FSF**

- [1277] J. C. Delbeek and D. D. Williams. Feeding selectivity of four species of sympatric stickleback in brackish-water habitats in eastern Canada. *Journal of Fish Biology*, 32(1):41–62, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goss:1988:EAA**

- [1278] G. G. Goss and C. M. Wood. The effects of acid and acid/aluminum exposure on circulating plasma cortisol levels and other blood parameters in the rainbow trout, *Salmo gairdneri*. *Journal of Fish Biology*, 32(1):63–76, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hirata:1988:IGS**

- [1279] T. Hirata, A. Goto, and F. Yamazaki. Individual growth and smoltification of juvenile masu salmon, *Oncorhynchus masou* Brevoort, under rearing conditions. *Journal of Fish Biology*, 32(1):77–84, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Okach:1988:FFH**

- [1280] J. O. Okach and S. Dadzie. The food, feeding habits and distribution of a siluroid catfish, *Bagrus docmac* (Forsskål), in the Kenya waters of Lake Victoria. *Journal of Fish Biology*, 32(1):85–94, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reay:1988:IGM**

- [1281] P. J. Reay and V. Cornell. Identification of grey mullet (Teleostei: Mugilidae) juveniles from British waters. *Journal of Fish Biology*, 32(1):95–99, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1988:FLF**

- [1282] A. W. H. Turnpenny, C. H. Dempsey, M. H. Davis, and J. M. Fleming. Factors limiting fish populations in the Loch Fleet system, an acidic drainage system in south-west Scotland. *Journal of Fish Biology*, 32(1):101–118, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kulakkattolickal:1988:RAB**

- [1283] A. T. Kulakkattolickal and D. L. Kramer. The role of air breathing in the resistance of bimodally respiring fish to waterborne toxins. *Journal of Fish Biology*, 32(1):119–127, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sandnes:1988:NRS**

- [1284] K. Sandnes, Ø. Lie, and R. Waagbø. Normal ranges of some blood chemistry parameters in adult farmed Atlantic salmon, *Salmo salar*. *Journal of Fish Biology*, 32(1):129–136, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ovenden:1988:ERG**

- [1285] J. R. Ovenden, R. W. G. White, and A. C. Sanger. Evolutionary relationships of *Gadopsis* spp. inferred from restriction enzyme analysis of their mitochondrial DNA. *Journal of Fish Biology*, 32(1):137–148, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sezaki:1988:HPE**

- [1286] K. Sezaki, S. Watabe, and K. Hashimoto. Haematological parameters and erythrocyte enzyme activities associated with increase in ploidy status of the spinous loach, *Cobitis biwae* Jordan and Snyder. *Journal of Fish Biology*, 32(1):149–150, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Minchin:1988:OSD**

- [1287] D. Minchin. Observations on the southern distribution of the jellycat, *Anarhichas denticulata* Kröyer. *Journal of Fish Biology*, 32(1):151–152, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hvidsten:1988:IRR**

- [1288] N. A. Hvidsten and L. P. Hansen. Increased recapture rate of adult Atlantic salmon, *Salmo salar* L., stocked as smolts at high water discharge. *Journal of Fish Biology*, 32(1):153–154, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turner:1988:EIM**

- [1289] G. F. Turner. Environmental influences on male breeding colouration in *Oreochromis niloticus*. *Journal of Fish Biology*, 32(1):155–156, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Swinney:1988:TSB**

- [1290] G. N. Swinney. Two species of *Bathophilus* (Stomiiformes, Stomiidae) new to the north-eastern Atlantic. *Journal of Fish Biology*, 32(1):157–158, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRa**

- [1291] Anonymous. Book review. *Journal of Fish Biology*, 32(1):159–160, January 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Taylor:1988:EAM**

- [1292] P. B. Taylor. Effects of anaesthetic MS 222 on the orientation of juvenile salmon, *Oncorhynchus tshawytscha* Walbaum. *Journal of Fish Biology*, 32(2):161–168, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Levin:1988:OSA**

- [1293] L. E. Levin and P. Belmonte. Oriented swimming at an angle to light in a schooling characid, *Moenkhausia dichrova* Kner. *Journal of Fish Biology*, 32(2):169–177, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Michaud:1988:DAY**

- [1294] M. Michaud, J.-D. Dutil, and J. J. Dodson. Determination of the age of young American eels, *Anguilla rostrata*, in fresh water, based on otolith surface area and microstructure. *Journal of Fish Biology*, 32(2):179–189, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cataldi:1988:MCO**

- [1295] E. Cataldi, D. Crosetti, G. Conte, D. D'Ovidio, and S. Cataudella. Morphological changes in the oesophageal epithelium during adaptation to salinities in *Oreochromis mossambicus*, *O. niloticus* and their hybrid. *Journal of Fish Biology*, 32(2):191–196, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dheer:1988:HHB**

- [1296] J. M. S. Dheer. Haematological, haematopoietic and biochemical responses to thermal stress in an air-breathing freshwater fish, *Channa punctatus* Bloch. *Journal of Fish Biology*, 32(2):197–206, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Obiekezie:1988:DAE**

- [1297] A. I. Obiekezie, H. Möer, and K. Anders. Diseases of the African estuarine catfish *Chrysichthys nigrodigitatus* (Lacépède) from the Cross River estuary, Nigeria. *Journal of Fish Biology*, 32(2):207–221, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mudarris:1988:QQS**

- [1298] M. Mudarris and B. Austin. Quantitative and qualitative studies of the bacterial microflora of turbot, *Scophthalmus maximus* L., gills. *Journal of Fish Biology*, 32(2):223–229, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saint-Paul:1988:EAO**

- [1299] U. Saint-Paul and G. M. Soares. Ecomorphological adaptation to oxygen deficiency in Amazon floodplains by serrasalmid fish of the genus *Mylos-*

soma. *Journal of Fish Biology*, 32(2):231–236, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barber:1988:CSA**

- [1300] W. E. Barber and R. J. Walker. Circuli spacing and annulus formation: is there more than meets the eye? The case for sockeye salmon, *Oncorhynchus nerka*. *Journal of Fish Biology*, 32(2):237–245, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Martinez:1988:ETO**

- [1301] I. Martinez, G. Viscor, and J. Palomeque. Effects of temperature, oxygen and carbon dioxide on osmotic fragility of carp, *Cyprinus carpio* L., erythrocytes. *Journal of Fish Biology*, 32(2):247–252, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laidley:1988:SRR**

- [1302] C. W. Laidley, P. T. K. Woo, and J. F. Leatherland. The stress-response of rainbow trout to experimental infection with the blood parasite *Cryptobia salmositica* Katz, 1951. *Journal of Fish Biology*, 32(2):253–261, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**MacKenzie:1988:PMN**

- [1303] K. MacKenzie. Presumptive mycobacteriosis in North-east Atlantic mackerel, *Scomber scombrus* L. *Journal of Fish Biology*, 32(2):263–275, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tort:1988:ESC**

- [1304] L. Tort and P. Torres. The effects of sublethal concentrations of cadmium on haematological parameters in the dogfish, *Scyliorhinus canicula*. *Journal of Fish Biology*, 32(2):277–282, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Townsend:1988:FCS**

- [1305] C. R. Townsend and G. Peirson. Fish community structure in lowland drainage channels. *Journal of Fish Biology*, 32(2):283–295, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sorensen:1988:HCG**

- [1306] P. W. Sorensen and N. W. Pankhurst. Histological changes in the gonad, skin, intestine and olfactory epithelium of artificially-matured male



American eels, *Anguilla rostrata* (LeSueur). *Journal of Fish Biology*, 32 (2):297–307, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cabrera:1988:ASR**

- [1307] J. Cabrera, G. Martinez, and A. Alforo. An anomalous specimen of *Rhamdia guatemalensis* (Günther, 1864). *Journal of Fish Biology*, 32 (2):309–310, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowan:1988:ILS**

- [1308] G. I. McT. Cowan and E. M. Baggs. Incidences of lacustrine spawning of the ouananiche, *Salmo salar*, and the brook charr, *Salvelinus fontinalis*, on the Avalon Peninsula, Newfoundland. *Journal of Fish Biology*, 32 (2):311–312, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Minchin:1988:RDS**

- [1309] D. Minchin. A record of the deep-sea anglerfish, *Cryptopsaras couesi* Gill, from the north-eastern Atlantic. *Journal of Fish Biology*, 32(2):313, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRb**

- [1310] Anonymous. Book reviews. *Journal of Fish Biology*, 32(2):315–317, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:N**

- [1311] Anonymous. Notice. *Journal of Fish Biology*, 32(2):319, February 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baksi:1988:PCE**

- [1312] S. M. Baksi and J. C. Means. Preparation of chromosomes from early stages of fish for cytogenetic analysis. *Journal of Fish Biology*, 32(3):321–325, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Verspoor:1988:WHB**

- [1313] E. Verspoor. Widespread hybridization between native Atlantic salmon, *Salmo salar*, and introduced brown trout, *S. trutta*, in eastern Newfoundland. *Journal of Fish Biology*, 32(3):327–334, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Black:1988:ECR**

- [1314] D. Black and R. Malcolm Love. Estimating the carbohydrate reserves in fish. *Journal of Fish Biology*, 32(3):335–340, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Franklin:1988:XCG**

- [1315] C. E. Franklin and W. Davison. X-cells in the gills of an Antarctic teleost, *Pagothenia borchgrevinki*. *Journal of Fish Biology*, 32(3):341–353, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**OMaoileidigh:1988:MMC**

- [1316] N. O’Maoileidigh, S. Cawdery, J. J. Bracken, and A. Ferguson. Morphometric, meristic character and electrophoretic analyses of two Irish populations of twaite shad, *Alosa fallax* (Lacépède). *Journal of Fish Biology*, 32(3):355–366, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Prasad:1988:MGD**

- [1317] M. S. Prasad. Morphometrics of gills during growth and development of the air-breathing habit in *Colisa fasciatus* (Bloch and Schneider). *Journal of Fish Biology*, 32(3):367–381, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Isaac-Nahum:1988:ASB**

- [1318] V. J. Isaac-Nahum, R. de D. Cardoso, G. Servo, and C. L. del B. Rossi-Wongtschowski. Aspects of the spawning biology of the Brazilian sardine, *Sardinella brasiliensis* (Steindachner, 1879), (Clupeidae). *Journal of Fish Biology*, 32(3):383–396, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kramer:1988:ETI**

- [1319] C. R. Kramer, S. Koulisch, and P. L. Bertacchi. The effects of testosterone implants on ovarian morphology in the bluehead wrasse, *Thalassoma bifasciatum* (Bloch) (Teleostei: Labridae). *Journal of Fish Biology*, 32(3):397–407, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wyatt:1988:CEY**

- [1320] R. J. Wyatt. The cause of extreme year class variation in a population of roach, *Rutilus rutilus* L., from a eutrophic lake in southern England. *Journal of Fish Biology*, 32(3):409–421, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Badcock:1988:EAD**

- [1321] J. Badcock. Evidence for the assignment of *Dolichopteryx brachyrhynchus* Parr to the genus *Bathylchnops* Cohen (Pisces, Opisthoproctidae). *Journal of Fish Biology*, 32(3):423–432, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burton:1988:CET**

- [1322] D. Burton. A comparison of the effects of temperature on melanophore in vitro responses to noradrenalin in two teleost species adapted to cold ocean and tropical conditions. *Journal of Fish Biology*, 32(3):433–442, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Darowski:1988:BMP**

- [1323] K. Darowski, F. Takashima, and Y. K. Law. Bioenergetic model of planktivorous fish feeding, growth and metabolism: theoretical optimum swimming speed of fish larvae. *Journal of Fish Biology*, 32(3):443–458, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gartner:1988:ITF**

- [1324] J. V. Gartner and D. E. Zwerner. An Ichthyophonous-type fungus in the deep-sea pelagic fish *Scopelogadus beanii* (Günther) (Pisces: Melamphaidae) pathology, geographic distribution and ecological implications. *Journal of Fish Biology*, 32(3):459–470, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wardle:1988:BSS**

- [1325] C. S. Wardle and P. He. Burst swimming speeds of mackerel, *Scomber scombrus* L. *Journal of Fish Biology*, 32(3):471–478, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Okaeme:1988:PDC**

- [1326] A. N. Okaeme, A. I. Obiekezie, J. Lehman, E. E. Antai, and C. T. Madu. Parasites and diseases of cultured fish of Lake Kainji area, Nigeria. *Journal of Fish Biology*, 32(3):479–481, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bruno:1988:CRC**

- [1327] D. W. Bruno and C. O. Fraser. A case of reversal in the common dab *Limanda limanda* (L.). *Journal of Fish Biology*, 32(3):483–484, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Oyetayo:1988:IAE**

- [1328] A. S. Oyetayo. Infection of the African eleotrid *Bostrychus africanus* (Steindachner 1980) by the nematode *Raphidascaroides africanus*. *Journal of Fish Biology*, 32(3):485–486, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jorgensen:1988:URM**

- [1329] E. Jørgensen and M. Jobling. Use of radiographic methods in feeding studies: a cautionary note. *Journal of Fish Biology*, 32(3):487–488, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Minchin:1988:NRL**

- [1330] D. Minchin and Alwyne Wheeler. A new record for the lancetfish, *Alepisaurus ferox* Lowe (Osteichthys: Scopeliformes: Alepisauridae), in the north-eastern Atlantic. *Journal of Fish Biology*, 32(3):489–491, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tytler:1988:DYS**

- [1331] P. Tytler and J. H. S. Blaxter. Drinking in yolk-sac stage larvae of the halibut, *Hippoglossus hippoglossus* (L.). *Journal of Fish Biology*, 32(3):493–494, March 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tzeng:1988:DGI**

- [1332] W.-N. Tzeng and S.-Y. Yu. Daily growth increments in otoliths of milkfish, *Chanos chanos* (Forsskål), larvae. *Journal of Fish Biology*, 32(4):495–504, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saglio:1988:SCE**

- [1333] Ph. Saglio, A. M. Escaffre, and J. M. Blanc. Structural characteristics of the epidermal mucosa in yellow and silver European eel, *Anguilla anguilla* (L.). *Journal of Fish Biology*, 32(4):505–514, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marshall:1988:PAB**

- [1334] B. E. Marshall. A preliminary assessment of the biomass of the pelagic sardine *Limnothrissa miodon* in Lake Kariba. *Journal of Fish Biology*, 32(4):515–524, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mhaisen:1988:OPF**

- [1335] F. T. Mhaisen, N. K. Al-Salim, and N. R. Khamees. Occurrence of parasites of the freshwater mugilid fish *Liza abu* (Heckel) from Basrah, southern Iraq. *Journal of Fish Biology*, 32(4):525–532, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Galloway:1988:TER**

- [1336] M. L. Galloway and R. V. Kilambi. Thermal enrichment of a reservoir and the effects on annulus formation and growth of largemouth bass, *Micropterus salmoides*. *Journal of Fish Biology*, 32(4):533–543, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roubal:1988:MWR**

- [1337] F. R. Roubal and A. M. Bullock. The mechanism of wound repair in the skin of juvenile Atlantic salmon, *Salmo salar* L., following hydrocortisone implantation. *Journal of Fish Biology*, 32(4):545–555, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**vanDijk:1988:EAB**

- [1338] P. L. M. van Dijk and C. M. Wood. The effect of  $\beta$ -adrenergic blockade on the recovery process after strenuous exercise in the rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 32(4):557–570, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ogari:1988:FNP**

- [1339] J. Ogari and S. Dadzie. The food of the Nile perch, *Lates niloticus* (L.), after the disappearance of the haplochromine cichlids in the Nyanza Gulf of Lake Victoria (Kenya). *Journal of Fish Biology*, 32(4):571–577, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1988:CIN**

- [1340] P. M. Hine and J. M. Wain. Characterization of inflammatory neutrophils induced by bacterial endotoxin in the blood of eels, *Anguilla australis*. *Journal of Fish Biology*, 32(4):579–592, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Economidis:1988:NHL**

- [1341] P. S. Economidis and A. I. Sinis. A natural hybrid of *Leuciscus cephalus macedonicus*  $\times$  *Chalcalburnus chalcoides macedonicus* (Pisces,

Cyprinidae) from Lake Volvi (Macedonia, Greece). *Journal of Fish Biology*, 32(4):593–605, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reader:1988:GMU**

- [1342] J. P. Reader, T. R. K. Dalziel, and R. Morris. Growth, mineral uptake and skeletal calcium deposition in brown trout, *Salmo trutta* L., yolk-sac fry exposed to aluminium and manganese in soft acid water. *Journal of Fish Biology*, 32(4):607–624, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shand:1988:CIF**

- [1343] J. Shand. Corneal iridescence in fishes: light-induced colour changes in relation to structure. *Journal of Fish Biology*, 32(4):625–632, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Valente:1988:NFA**

- [1344] A. C. N. Valente. A note on fin abnormalities in *Leuciscus cephalus* L. and *Carassius carassius* L. (Pisces: Cyprinidae). *Journal of Fish Biology*, 32(4):633–634, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alabaster:1988:DOR**

- [1345] J. S. Alabaster. The dissolved oxygen requirements of upstream migrant Chinook salmon, *Oncorhynchus tshawytscha*, in the lower Willamette River, Oregon. *Journal of Fish Biology*, 32(4):635–636, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRc**

- [1346] Anonymous. Book review. *Journal of Fish Biology*, 32(4):637–638, April 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hesthagen:1988:MBT**

- [1347] T. Hesthagen. Movements of brown trout, *Salmo trutta*, and juvenile Atlantic salmon, *Salmo salar*, in a coastal stream in northern Norway. *Journal of Fish Biology*, 32(5):639–653, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rodgers:1988:ARS**

- [1348] L. J. Rodgers and J. B. Burke. Aetiology of ‘red spot’ disease (vibriosis) with special reference to the ectoparasitic digenean *Prototransversotrema steeri* (Angel) and the sea mullet, *Mugil cephalus* (Linnaeus). *Journal of*

*Fish Biology*, 32(5):655–663, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Don:1988:CSI**

- [1349] J. Don and R. R. Avtalion. Comparative study on the induction of triploidy in tilapias, using cold- and heat-shock techniques. *Journal of Fish Biology*, 32(5):665–672, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smit:1988:BCF**

- [1350] G. L. Smit and H. J. Schoonbee. Blood coagulation factors in the freshwater fish *Oreochromis mossambicus*. *Journal of Fish Biology*, 32(5):673–677, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jurvelius:1988:SVC**

- [1351] J. Jurvelius, T. Lindem, and T. Heikkinen. The size of a vendace, *Coregonus albula* L., stock in a deep lake basin monitored by hydroacoustic methods. *Journal of Fish Biology*, 32(5):679–687, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1988:LOS**

- [1352] A. D. Pickering and T. G. Pottinger. Lymphocytopenia and the overwinter survival of Atlantic salmon parr, *Salmo salar* L. *Journal of Fish Biology*, 32(5):689–697, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Levesley:1988:PDR**

- [1353] P. B. Levesley and A. E. Magurran. Population differences in the reaction of minnows to alarm substance. *Journal of Fish Biology*, 32(5):699–706, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ladich:1988:SPG**

- [1354] F. Ladich. Sound production by the gudgeon, *Gobio gobio* L., a common European freshwater fish (Cyprinidae, Teleostei). *Journal of Fish Biology*, 32(5):707–715, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heggenes:1988:DMC**

- [1355] J. Heggenes and T. Traaen. Downstream migration and critical water velocities in stream channels for fry of four salmonid species. *Journal of*

*Fish Biology*, 32(5):717–727, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Little:1988:FCE**

- [1356] M. C. Little, P. J. Reay, and S. J. Grove. The fish community of an East African mangrove creek. *Journal of Fish Biology*, 32(5):729–747, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cui:1988:ERT**

- [1357] Y. Cui and R. J. Wootton. Effects of ration, temperature and body size on the body composition, energy content and condition of the minnow, *Phoxinus phoxinus* (L.). *Journal of Fish Biology*, 32(5):749–764, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sayer:1988:RBN**

- [1358] M. D. J. Sayer and N. Blackstock. The relationship between nitrogen output and changes in mucous cell function in the amphibious teleost *Blennius pholis* L. during aerial exposure. *Journal of Fish Biology*, 32(5):765–776, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Huntingford:1988:FMR**

- [1359] F. A. Huntingford, N. B. Metcalfe, and J. E. Thorpe. Feeding motivation and response to predation risk in Atlantic salmon parr adopting different life history strategies. *Journal of Fish Biology*, 32(5):777–782, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hall:1988:ERS**

- [1360] S. J. Hall. The effects of reversal of seasonal changes in photoperiod on the growth and food consumption of cod, *Gadus morhua* L. *Journal of Fish Biology*, 32(5):783–792, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Micale:1988:PEG**

- [1361] V. Micale and F. Perdichizzi. Photoperiod effects on gonadal maturation in captivity-born gilthead bream, *Sparus aurata* (L.): early findings. *Journal of Fish Biology*, 32(5):793–794, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hunsinger:1988:UGM**

- [1362] R. N. Hunsinger, B. R. Byram, and W. M. Howell. Unchanged gonadal morphology of mosquitofish masculinized by exposure to degraded plant



sterols. *Journal of Fish Biology*, 32(5):795–796, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spanier:1988:IPT**

- [1363] E. Spanier and M. Goren. An Indo–Pacific trunkfish *Tetrosomus gibbosus* (Linnaeus): first record of the family *Ostracionidae* in the Mediterranean. *Journal of Fish Biology*, 32(5):797–798, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barrett:1988:GHR**

- [1364] B. A. Barrett and B. A. McKeown. Growth hormone response to sustained swimming in exercise-acclimated steelhead trout, *Salmo gairdneri*. *Journal of Fish Biology*, 32(5):799–800, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Buchmann:1988:SDP**

- [1365] K. Buchmann. Spatial distribution of *Pseudodactylogymys anguillae* and *P. bini* (Monogenea) on the gills of the European eel, *Anguilla anguilla*. *Journal of Fish Biology*, 32(5):801–802, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mittal:1988:IMS**

- [1366] A. K. Mittal and T. K. Garg. An improved method of separation of intact epidermal sheets in fish. *Journal of Fish Biology*, 32(5):803–804, May 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rand:1988:BIS**

- [1367] T. G. Rand and M. Wiles. Bacterial involvement in a saddleback disease of the reef silverside, *At henna harringtonensis* Goode (Pisces: Atherinidae) from Bermudan waters. *Journal of Fish Biology*, 32(6):805–816, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Nelson:1988:SPS**

- [1368] S. G. Nelson and S. DeC. Wilkins. Sediment processing by the surgeonfish *Ctenochaetus striatus* at Moorea, French Polynesia. *Journal of Fish Biology*, 32(6):817–824, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McMahon:1988:VDS**

- [1369] T. E. McMahon and G. F. Hartman. Variation in the degree of silvering of wild Coho salmon, *Oncorhynchus kisutch*, smolts migrating seaward

from Carnation Creek, British Columbia. *Journal of Fish Biology*, 32(6): 825–833, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Echelle:1988:PLS**

- [1370] A. A. Echelle, A. F. Echelle, L. E. DeBault, and D. W. Durham. Ploidy levels in silverside fishes (Atherinidae, Menidia) on the Texas coast: flow-cytometric analysis of the occurrence of allotripleidy. *Journal of Fish Biology*, 32(6):835–844, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Peleteiro:1988:ISI**

- [1371] M. C. Peleteiro and R. H. Richards. Immunocytochemical studies on immunoglobulin-containing cells in the epidermis of rainbow trout *Salmo gairdneri* Richardson: influence of bath vaccination. *Journal of Fish Biology*, 32(6):845–858, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Santulli:1988:TCC**

- [1372] A. Santulli, A. Curatolo, A. Modica, and V. D'Amelio. Time-course changes of plasma lipid levels and lipoprotein pattern after feeding in cultured sea bass, *Dicentrarchus labrax* L. *Journal of Fish Biology*, 32(6):859–867, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kazakov:1988:RAR**

- [1373] R. V. Kazakov, O. L. Christoforov, I. G. Murza, S. A. Ilyenkova, and S. F. Titov. Results of accelerated rearing of Atlantic salmon, *Salmo salar* L., smolts by use of warm waste water. *Journal of Fish Biology*, 32(6):869–880, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bellwood:1988:SCS**

- [1374] D. R. Bellwood. Seasonal changes in the size and composition of the fish yield from reefs around Apo Island, Central Philippines, with notes on methods of yield estimation. *Journal of Fish Biology*, 32(6):881–893, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1988:CCJ**

- [1375] E. J. Hyslop. A comparison of the composition of the juvenile fish catch from the sokoto-rima floodplain, Nigeria in years preceding and immediately after upstream dam completion. *Journal of Fish Biology*, 32(6):

895–899, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gardner:1988:MAT**

- [1376] A. S. Gardner, A. F. Walker, and R. B. Greer. Morphometric analysis of two ecologically distinct forms of Arctic charr, *Salvelinus alpinus* (L.), in Loch Rannoch, Scotland. *Journal of Fish Biology*, 32(6):901–910, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anderson:1988:EFF**

- [1377] T. A. Anderson. The effect of feeding frequency on utilization of algal nutrients by the marine herbivore, the luderick, *Girella tricuspidata* (Quoy and Gaimard). *Journal of Fish Biology*, 32(6):911–921, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hislop:1988:IML**

- [1378] J. R. G. Hislop. The influence of maternal length and age on the size and weight of the eggs and the relative fecundity of the haddock, *Melanogrammus aeglefinus*, in British waters. *Journal of Fish Biology*, 32(6):923–930, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mir:1988:NNI**

- [1379] S. Mir, A. Al-Absy, and F. Krupp. A new natural intergeneric cyprinid hybrid from the Jordan River drainage, with a key to the large barbine cyprinids of the southern Levant. *Journal of Fish Biology*, 32(6):931–936, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Battram:1988:EAL**

- [1380] J. C. Battram. The effects of aluminium and low<sup>p</sup> H on chloride fluxes in the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 32(6):937–947, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gibson:1988:DMP**

- [1381] R. N. Gibson. Development, morphometry and particle retention capability of the gill rakers in the herring, *Clupea harengus* L. *Journal of Fish Biology*, 32(6):949–962, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morgan:1988:EHS**

- [1382] M. J. Morgan. The effect of hunger, shoal size and the presence of a predator on shoal cohesiveness in bluntnose minnows, *Pimephales notatus* Rafinesque. *Journal of Fish Biology*, 32(6):963–971, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bianco:1988:OAG**

- [1383] P. G. Bianco. Occurrence of the Asiatic gobionid *Pseudorasbora parva* (Temminck and Schlegel) in south-eastern Europe. *Journal of Fish Biology*, 32(6):973–974, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hinkens:1988:TBP**

- [1384] E. Hinkens and P. A. Cochran. Taste buds on pelvic fin rays of the burbot, *Lota lota* (L.). *Journal of Fish Biology*, 32(6):975, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bouain:1988:NTS**

- [1385] A. Bouain and Y. Siau. A new technique for staining fish otoliths for age determination. *Journal of Fish Biology*, 32(6):977–978, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRd**

- [1386] Anonymous. Book review. *Journal of Fish Biology*, 32(6):979, June 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Austin:1988:EAC**

- [1387] B. Austin and A. M. J. Al-Zahrani. The effect of antimicrobial compounds on the gastrointestinal microflora of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 33(1):1–14, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Villarreal:1988:IPG**

- [1388] C. A. Villarreal, J. E. Thorp, and M. S. Miles. Influence of photoperiod on growth changes in juvenile Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 33(1):15–30, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bortz:1988:PTS**

- [1389] B. M. Bortz, G. E. Kenny, G. B. Pauley, and A. H. Bunt-Milam. Prevalence of two site-specific populations of *Diplostomum* spp. in eye infec-

tions of rainbow trout, *Salmo gairdneri* Richardson, from lakes in Washington State, U.S.A. *Journal of Fish Biology*, 33(1):31–43, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wyatt:1988:ECG**

- [1390] R. J. Wyatt and C. R. Kennedy. The effects of a change in the growth rate of roach, *Rutilus rutilus* (L.), on the biology of the fish tapeworm *Ligula intestinalis* (L.). *Journal of Fish Biology*, 33(1):45–57, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowx:1988:DVG**

- [1391] I. G. Cowx. Distribution and variation in the growth of roach, *Rutilus rutilus* (L.), and dace, *Leuciscus leuciscus* (L.), in a river catchment in south-west England. *Journal of Fish Biology*, 33(1):59–72, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laidley:1988:CSA**

- [1392] C. W. Laidley and J. F. Leatherland. Cohort sampling, anaesthesia and stocking-density effects on plasma cortisol, thyroid hormone, metabolite and ion levels in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 33(1):73–88, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hwang:1988:SEC**

- [1393] P. P. Hwang and S. M. Wu. Salinity effects on cytometrical parameters of the kidney in the euryhaline teleost *Oreochromis mossambicus* Peters. *Journal of Fish Biology*, 33(1):89–95, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Greeley:1988:COG**

- [1394] M. S. Greeley, Jr., R. Macgregor III, and K. R. Marion. Changes in the ovary of the Gulf killifish, *Fundulus grandis* (Baird and Girard), during seasonal and semilunar spawning cycles. *Journal of Fish Biology*, 33(1):97–107, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rogers:1988:REE**

- [1395] S. I. Rogers. Reproductive effort and efficiency in the female common goby, *Pomatoschistus microps* (Krøyer) (Teleostei: Gobioidae). *Journal of Fish Biology*, 33(1):109–119, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hvidsten:1988:PHR**

- [1396] N. A. Hvidsten and R. A. Lund. Predation on hatchery-reared and wild smolts of Atlantic salmon, *Salmo salar* L., in the estuary of River Orkla, Norway. *Journal of Fish Biology*, 33(1):121–126, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Johnsen:1988:OSH**

- [1397] P. B. Johnsen, H. Zhou, and M. A. Adams. Olfactory sensitivity of the herbivorous grass carp, *Ctenopharyngodon idella*, to amino acids. *Journal of Fish Biology*, 33(1):127–134, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**El-Fiky:1988:LSP**

- [1398] N. El-Fiky and W. Wieser. Life styles and patterns of development of gills and muscles in larval cyprinids (Cyprinidae; Teleostei). *Journal of Fish Biology*, 33(1):135–145, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Zheng:1988:MHS**

- [1399] W. B. Zheng and W. S. Liu. Morphology and histology of the swim-bladder and infrastructure of respiratory epithelium in the air-breathing catfish, *Pangasius sutchi* (Pangasiidae). *Journal of Fish Biology*, 33(1):147–154, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rehnberg:1988:IAS**

- [1400] B. G. Rehnberg and R. J. F. Smith. The influence of alarm substance and shoal size on the behaviour of zebra danios, *Brachydanio rerio* (Cyprinidae). *Journal of Fish Biology*, 33(1):155–163, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whitear:1988:TBE**

- [1401] M. Whitear. ‘Tubule bodies’ in the epidermis of *Ciliata mustela*. *Journal of Fish Biology*, 33(1):165–166, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRe**

- [1402] Anonymous. Book reviews. *Journal of Fish Biology*, 33(1):167–170, July 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sadler:1988:ICA**

- [1403] K. Sadler and S. Lynam. The influence of calcium on aluminium-induced changes in the growth rate and mortality of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 33(2):171–179, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stewart:1988:CCM**

- [1404] K. M. Stewart. Changes in condition and maturation of the *Oreochromis niloticus* L. population of Ferguson's Gulf, Lake Turkana, Kenya. *Journal of Fish Biology*, 33(2):181–188, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gehrke:1988:IGM**

- [1405] P. C. Gehrke. Influence of gut morphology, sensory cues and hunger on feeding behaviour of spangled perch, *Leiopotherapon unicolor* (Günther, 1859), (Percoidei, Teraponidae). *Journal of Fish Biology*, 33(2):189–201, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Campton:1988:EIG**

- [1406] D. E. Campton and G. A. E. Gall. Effect of individual and group rearing on age and size at maturity of male mosquitofish, *Gambusia affinis*. *Journal of Fish Biology*, 33(2):203–212, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bellwood:1988:OCD**

- [1407] D. R. Bellwood. Ontogenetic changes in the diet of early post-settlement *Scarus* species (Pisces: Scaridae). *Journal of Fish Biology*, 33(2):213–219, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1988:SSO**

- [1408] P. A. Henderson, R. H. A. Holmes, and R. N. Bamber. Size-selective overwintering mortality in the sand smelt, *Atherina boyeri* Risso, and its role in population regulation. *Journal of Fish Biology*, 33(2):221–233, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1988:UCO**

- [1409] P. M. Hine and J. M. Wain. Ultrastructural and cytochemical observations on the granulocytes of the sturgeon, *Acipenser brevirostrum* (Chon-

drostei). *Journal of Fish Biology*, 33(2):235–245, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mine:1988:OGP**

- [1410] P. M. Mine and J. M. Wain. Observations on the granulocyte peroxidase of teleosts: a phylogenetic perspective. *Journal of Fish Biology*, 33(2):247–254, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**He:1988:EIS**

- [1411] P. He and C. S. Wardle. Endurance at intermediate swimming speeds of Atlantic mackerel, *Scomber scombrus* L., herring, *Clupea harengus* L., and saithe, *Pollachius virens* L. *Journal of Fish Biology*, 33(2):255–266, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Treasurer:1988:MRF**

- [1412] J. W. Treasurer. Measurement of regurgitation in feeding studies of predatory fishes. *Journal of Fish Biology*, 33(2):267–271, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Matthews:1988:TES**

- [1413] W. J. Matthews, L. G. Hill, D. R. Edds, J. J. Hoover, and T. G. Heger. Trophic ecology of striped bass, *Morone saxatilis*, in a freshwater reservoir (Lake Texoma, U.S.A.). *Journal of Fish Biology*, 33(2):273–288, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mohan:1988:TNI**

- [1414] M. V. Mohan and T. M. Sankaran. Two new indices for stomach content analysis of fishes. *Journal of Fish Biology*, 33(2):289–292, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowey:1988:SUA**

- [1415] C. B. Cowey and M. J. Walton. Studies on the uptake of (<sup>14</sup>C) amino acids derived from both dietary (<sup>14</sup>C) protein and dietary (<sup>14</sup>C) amino acids by rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 33(2):293–305, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dwyer:1988:BCL**

- [1416] F. J. Dwyer, C. J. Schmitt, S. E. Finger, and P. M. Mehrle. Biochemical changes in longear sunfish, *Lepomis megalotis*, associated with lead,



cadmium and zinc from mine tailings. *Journal of Fish Biology*, 33(2): 307–317, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Korcock:1988:ESC**

- [1417] D. E. Korcock, A. H. Houston, and J. D. Gray. Effects of sampling conditions on selected blood variables of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 33(2):319–330, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bromley:1988:GDE**

- [1418] P. J. Bromley. Gastric digestion and evacuation in whiting, *Merlangius merlangus* (L.). *Journal of Fish Biology*, 33(2):331–338, August 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dorman:1988:DGB**

- [1419] J. A. Dorman. Diet of the garfish, *Belone belone* (L.), from Courtmacsherry Bay, Ireland. *Journal of Fish Biology*, 33(3):339–346, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heggberget:1988:TSS**

- [1420] T. G. Heggberget, T. Haukebø, J. Mork, and G. Ståhl. Temporal and spatial segregation of spawning in sympatric populations of Atlantic salmon, *Salmo salar* L., and brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 33(3):347–356, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Trendall:1988:DDI**

- [1421] J. Trendall. The distribution and dispersal of introduced fish at Thumbi West Island in Lake Malaŵi, Africa. *Journal of Fish Biology*, 33(3): 357–369, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Herrera:1988:AGR**

- [1422] M. Herrera, J. A. Hernando, C. Fernandez-Delgado, and M. Bellido. Age, growth and reproduction of the barbel, *Barbus sclateri* (Günther, 1868), in a first-order stream in southern Spain. *Journal of Fish Biology*, 33(3): 371–381, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gambaryan:1988:KMS**

- [1423] S. P. Gambaryan. Kidney morphology in sturgeons: a microdissectional and ultrastructural study. *Journal of Fish Biology*, 33(3):383–398,

September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hofer:1988:MAD**

- [1424] R. Hofer. Morphological adaptations of the digestive tract of tropical cyprinids and cichlids to diet. *Journal of Fish Biology*, 33(3):399–408, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alhossaini:1988:RBD**

- [1425] M. Alhossaini and T. J. Pitcher. The relation between daily rings, body growth and environmental factors in plaice, *Pleuronectes platessa* L., juvenile otoliths. *Journal of Fish Biology*, 33(3):409–418, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Greeley:1988:VPO**

- [1426] M. S. Greeley, Jr., R. Macgregor III, and K. R. Marion. Variation in plasma oestrogens and androgens during the seasonal and semilunar spawning cycles of female gulf killifish, *Fundulus grandis* (Baird and Girard). *Journal of Fish Biology*, 33(3):419–429, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cui:1988:BGCa**

- [1427] Y. Cui and R. J. Wootton. Bioenergetics of growth of a cyprinid, *Phoxinus phoxinus*: the effect of ration, temperature and body size on food consumption, faecal production and nitrogenous excretion. *Journal of Fish Biology*, 33(3):431–443, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1988:AEA**

- [1428] R. L. Smith, A. J. Paul, and J. M. Paul. Aspects of energetics of adult walleye pollock, *Theragra chalcogramma* (Pallas), from Alaska. *Journal of Fish Biology*, 33(3):445–454, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coates:1988:LDC**

- [1429] D. Coates. Length-dependent changes in egg size and fecundity in females, and brooded embryo size in males, of fork-tailed catfishes (Pisces: Ariidae) from the Sepik River, Papua New Guinea, with some implications for stock assessments. *Journal of Fish Biology*, 33(3):455–464, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ntiba:1988:AGP**

- [1430] M. J. Ntiba and V. Jaccarini. Age and growth parameters of *Siganus sutor* in Kenyan marine inshore water, derived from numbers of otolith microbands and fish lengths. *Journal of Fish Biology*, 33(3):465–470, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ogata:1988:CAA**

- [1431] H. Ogata and T. Murai. Changes in ammonia and amino acid levels in the erythrocytes and plasma of carp, *Cyprinus carpio*, during passage through the gills. *Journal of Fish Biology*, 33(3):471–479, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Harvey:1988:DEL**

- [1432] B. C. Harvey, R. C. Cashner, and W. J. Matthews. Differential effects of largemouth and smallmouth bass on habitat use by stoneroller minnows in stream pools. *Journal of Fish Biology*, 33(3):481–487, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wheeler:1988:NSS**

- [1433] Alwyne Wheeler. The nomenclature of the sole, *Solea solea* (Linnaeus, 1758). *Journal of Fish Biology*, 33(3):489–490, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hyslop:1988:FOA**

- [1434] E. J. Hyslop. First occurrence of *Acanthogyrus tilapiae* (Baylis 1948) in *Hemichromis* species. *Journal of Fish Biology*, 33(3):491–492, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRf**

- [1435] Anonymous. Book reviews. *Journal of Fish Biology*, 33(3):493–496, September 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wheeler:1988:FSB**

- [1436] Alwyne Wheeler. The Fisheries Society of the British Isles: its origin and early history. *Journal of Fish Biology*, 33(4):497–499, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Getachew:1988:DEN**

- [1437] T. Getachew. Digestive efficiency and nutrient composition gradient in the gut of *Oreochromis niloticus* L. in Lake Awasa, Ethiopia. *Journal*

of *Fish Biology*, 33(4):501–509, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**dosSantos:1988:GEC**

- [1438] J. dos Santos and M. Jobling. Gastric emptying in cod, *Gadus morhua* L.: effects of food particle size and dietary energy content. *Journal of Fish Biology*, 33(4):511–516, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bengtsson:1988:VDF**

- [1439] Å. Bengtsson, B. E. Bengtsson, and G. Lithner. Vertebral defects in fourhorn sculpin, *Myoxocephalus quadricornis* L., exposed to heavy metal pollution in the Gulf of Bothnia. *Journal of Fish Biology*, 33(4):517–529, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stergiou:1988:FHL**

- [1440] K. I. Stergiou. Feeding habits of the Lessepsian migrant *Siganus luridus* in the eastern Mediterranean, its new environment. *Journal of Fish Biology*, 33(4):531–543, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mills:1988:EEN**

- [1441] C. A. Mills. The effect of extreme northerly climatic conditions on the life history of the minnow, *Phoxinus phoxinus* (L.). *Journal of Fish Biology*, 33(4):545–561, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Overnell:1988:ALE**

- [1442] J. Overnell, T. C. Fletcher, and R. McIntosh. The apparent lack of effect of supplementary dietary zinc on zinc metabolism and metallothionein concentrations in the turbot, *Scophthalmus maximus* (Linnaeus). *Journal of Fish Biology*, 33(4):563–570, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pereira:1988:MEM**

- [1443] J. J. Pereira. Morphological effects of mercury exposure on windowpane flounder gills as observed by scanning electron microscopy. *Journal of Fish Biology*, 33(4):571–580, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**García-Vázquez:1988:CPF**

- [1444] E. García-Vázquez, A. R. Linde, G. Blanco, J. A. Sanchez, E. Vázquez, and J. Rubio. Chromosome polymorphism in farm fry stocks of Atlantic salmon from Asturias. *Journal of Fish Biology*, 33(4):581–587, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brännäs:1988:EBS**

- [1445] E. Brännäs. Emergence of Baltic salmon, *Salmo salar* L., in relation to temperature: a laboratory study. *Journal of Fish Biology*, 33(4):589–600, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ellgaard:1988:KAS**

- [1446] E. G. Ellgaard and J. L. Guillot. Kinetic analysis of the swimming behaviour of bluegill sunfish, *Lepomis macrochirus* Rafinesque, exposed to copper: hypoactivity induced by sublethal concentrations. *Journal of Fish Biology*, 33(4):601–608, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mayer:1988:ARB**

- [1447] I. Mayer, S. E. Shackley, and J. S. Ryland. Aspects of the reproductive biology of the bass, *Dicentrarchus labrax* L. I. An histological and histochemical study of oocyte development. *Journal of Fish Biology*, 33(4):609–622, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1988:RSP**

- [1448] R. M. Wright and E. A. Shoesmith. The reproductive success of pike, *Esox lucius*: aspects of fecundity, egg density and survival. *Journal of Fish Biology*, 33(4):623–636, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Quinn:1988:EAC**

- [1449] T. P. Quinn, A. F. Olson, and J. T. Konecki. Effects of anaesthesia on the chemosensory behaviour of Pacific salmon. *Journal of Fish Biology*, 33(4):637–641, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sagar:1988:DFP**

- [1450] P. M. Sagar and G. J. Glova. Diel feeding periodicity, daily ration and prey selection of a riverine population of juvenile Chinook salmon, *Oncorhynchus tshawytscha* (Walbaum). *Journal of Fish Biology*, 33(4):643–

653, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coello:1988:TDS**

- [1451] S. Coello. Time of day of spawning in *Sardinops sagax* (Jenyns). *Journal of Fish Biology*, 33(4):655–656, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Donoghue:1988:GAN**

- [1452] S. Donoghue. *Gasterosteus aculeatus*, a new British host for the metacercariae of *Cryptocotyle concavum* (Digenea). *Journal of Fish Biology*, 33(4):657–658, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ramaiyan:1988:ASR**

- [1453] V. Ramaiyan and R. Sivakumar. An abnormal sting-ray caught off Parangipettai on the south-eastern coast of India. *Journal of Fish Biology*, 33(4):659–660, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRg**

- [1454] Anonymous. Book reviews. *Journal of Fish Biology*, 33(4):661–663, October 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Martinez-Palacios:1988:FEC**

- [1455] C. A. Martinez-Palacios and L. G. Ross. The feeding ecology of the Central American cichlid *Cichlasoma urophthalmus* (Günther). *Journal of Fish Biology*, 33(5):665–670, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wright:1988:RPT**

- [1456] J. M. Wright. Recruitment patterns and trophic relationships of fish in Sulaibikhat Bay, Kuwait. *Journal of Fish Biology*, 33(5):671–687, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deSilva:1988:ONH**

- [1457] S. S. de Silva and H. K. G. Sirisena. Observations on the nesting habits of *Oreochromis mossambicus* (Peters) (Pisces: Cichlidae) in Sri Lankan reservoirs. *Journal of Fish Biology*, 33(5):689–696, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Amundsen:1988:DGE**

- [1458] P. A. Amundsen and A. Klemetsen. Diet, gastric evacuation rates and food consumption in a stunted population of Arctic charr, *Salvelinus alpinus* L., in Takvatn, northern Norway. *Journal of Fish Biology*, 33(5):697–709, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Iger:1988:CRS**

- [1459] Y. Iger, M. Abraham, A. Dotan, B. Fattal, and E. Rahamim. Cellular responses in the skin of carp maintained in organically fertilized water. *Journal of Fish Biology*, 33(5):711–720, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tosi:1988:EAT**

- [1460] L. Tosi, L. Sala, C. Sola, A. Spampanato, and P. Tongiorgi. Experimental analysis of the thermal and salinity preferences of glass-eels, *Anguilla anguilla* (L.), before and during the upstream migration. *Journal of Fish Biology*, 33(5):721–733, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hartley:1988:CSA**

- [1461] S. E. Hartley. Cytogenetic studies of Atlantic salmon, *Salmo salar* L., in Scotland. *Journal of Fish Biology*, 33(5):735–740, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dellefors:1988:ESM**

- [1462] C. Dellefors and U. Faremo. Early sexual maturation in males of wild sea trout, *Salmo trutta* L., inhibits smoltification. *Journal of Fish Biology*, 33(5):741–749, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Klimley:1988:DMS**

- [1463] A. P. Klimley, S. B. Butler, D. R. Nelson, and A. T. Stull. Diel movements of scalloped hammerhead sharks, *Sphyrna lewini* Griffith and Smith, to and from a seamount in the Gulf of California. *Journal of Fish Biology*, 33(5):751–761, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cui:1988:BGCb**

- [1464] Y. Cui and R. J. Wootton. Bioenergetics of growth of a cyprinid, *Phoxinus phoxinus* (L.): the effect of ration and temperature on growth rate

and efficiency. *Journal of Fish Biology*, 33(5):763–773, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fang:1988:SPH**

- [1465] L.-S. Fang and J. L. Bada. A special pattern of haem catabolism in a marine fish, *Clinocottus analis*, with green blood plasma. *Journal of Fish Biology*, 33(5):775–780, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Banerjee:1988:CNG**

- [1466] S. K. Banerjee, K. K. Misra, S. Banerjee, and S. P. Ray-Chaudhuri. Chromosome numbers, genome sizes, cell volumes and evolution of snake-head fish (family Channidae). *Journal of Fish Biology*, 33(5):781–789, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Partington:1988:EBS**

- [1467] J. D. Partington and C. A. Mills. An electrophoretic and biometric study of Arctic charr, *Salvelinus alpinus* (L.), from ten British lakes. *Journal of Fish Biology*, 33(5):791–814, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mendo:1988:IEO**

- [1468] J. Mendo and D. Pauly. Indirect estimation of oxygen and food consumption in bonito, *Sarda chiliensis* (Scombridae). *Journal of Fish Biology*, 33(5):815–817, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barbieri:1988:APT**

- [1469] G. Barbieri and M. C. Barbieri. Ageing of *Parodon tortuosus* Eigenmann and Norris, 1900 (Osteichthyes, Parodontidae) from the Passa Cinco River, Brazil. *Journal of Fish Biology*, 33(5):819, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Minchin:1988:CGG**

- [1470] D. Minchin. Couch's goby, *Gobius couchi* (Teleostei: Gobiidae), from Irish waters. *Journal of Fish Biology*, 33(5):821–822, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ibrahim:1988:FER**

- [1471] A. A. Ibrahim and F. A. Huntingford. Foraging efficiency in relation to within-species variation in morphology in three-spined sticklebacks, *Gas-*



*terosteus aculeatus*. *Journal of Fish Biology*, 33(5):823–824, November 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McKaye:1988:SDH**

- [1472] K. R. McKaye and J. R. Stauffer, Jr. Seasonality, depth and habitat distribution of breeding males of *Oreochromis* spp., ‘chambo’, in Lake Malaŵi National Park. *Journal of Fish Biology*, 33(6):825–834, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Andersson:1988:BRI**

- [1473] E. Andersson, I. Mayer, and B. Borg. Book review: Inhibitory effect of 11-ketoandrostenedione and androstenedione on spermatogenesis in the three-spined stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 33(6):835–840, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Loewe:1988:OAT**

- [1474] H. Loewe and R. Eckmann. The ontogeny of the alimentary tract of coregonid larvae: normal development. *Journal of Fish Biology*, 33(6):841–850, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Weatherley:1988:RMD**

- [1475] A. H. Weatherley, H. S. Gill, and A. F. Lobo. Recruitment and maximal diameter of axial muscle fibres in teleosts and their relationship to somatic growth and ultimate size. *Journal of Fish Biology*, 33(6):851–859, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gamperl:1988:EST**

- [1476] A. K. Gamperl, J. Bryant, and E. D. Stevens. Effect of a sprint training protocol on growth rate, conversion efficiency, food consumption and body composition of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 33(6):861–870, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Quinitio:1988:ACT**

- [1477] G. F. Quinitio, H. Takahashi, and A. Goto. Annual changes in the testicular activity of the river sculpin, *Cottus hangiongensis* Mori, with emphasis on the occurrence of aberrant spermatids during spermatogenesis. *Journal of Fish Biology*, 33(6):871–878, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Armstrong:1988:CRA**

- [1478] J. D. Armstrong, M. Lucas, J. French, L. Vera, and I. G. Priede. A combined radio and acoustic transmitter for fixing direction and range of freshwater fish (RAFIX). *Journal of Fish Biology*, 33(6):879–884, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heggenes:1988:EMM**

- [1479] J. Heggenes and R. Borgstrøm. Effect of mink, *Mustela vison* Schreber, predation on cohorts of juvenile Atlantic salmon, *Salmo salar* L., and brown trout, *S. trutta* L., in three small streams. *Journal of Fish Biology*, 33(6):885–894, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bonar:1988:EST**

- [1480] S. A. Bonar, G. L. Thomas, and G. B. Pauley. Evaluation of the separation of triploid and diploid grass carp, *Ctenopharyngodon idella* (Valenciennes), by external morphology. *Journal of Fish Biology*, 33(6):895–898, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**LAbee-Lund:1988:OSD**

- [1481] J. H. L'Abée-Lund. Otolith shape discriminates between juvenile Atlantic salmon, *Salmo salar* L., and brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 33(6):899–903, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marconato:1988:MCE**

- [1482] A. Marconato and A. Bisazza. Mate choice, egg cannibalism and reproductive success in the river bullhead, *Cottus gobio* L. *Journal of Fish Biology*, 33(6):905–916, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Huntingford:1988:CFS**

- [1483] F. A. Huntingford, N. B. Metcalfe, and J. E. Thorpe. Choice of feeding station in Atlantic salmon, *Salmo salar*, parr: effects of predation risk, season and life history strategy. *Journal of Fish Biology*, 33(6):917–924, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tatner:1988:CFT**

- [1484] M. F. Tatner. The cryopreservation of fish thymocytes and its potential application for immunological reconstitution experiments. *Journal of Fish Biology*, 33(6):925–929, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorpe:1988:MRJ**

- [1485] J. E. Thorpe, R. I. G. Morgan, D. Pretswell, and P. J. Higgins. Movement rhythms in juvenile Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 33(6):931–940, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rydevik:1988:ETS**

- [1486] M. Rydevik. Epidermis thickness and secondary sexual characters in mature male and immature Baltic salmon, *Salmo salar* L., parr: seasonal variations and effects of castration and androgen treatment. *Journal of Fish Biology*, 33(6):941–944, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hughes:1988:ETD**

- [1487] G. M. Hughes and T. Koyama. Effect of temperature on the deformability of a lamprey, *Entosphenus japonicus*, and Pacific salmon, *Oncorhynchus keta*, red blood cells, studied using a modified filtration method. *Journal of Fish Biology*, 33(6):945–950, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davis:1988:TOG**

- [1488] P. S. Davis. Two occurrences of the gilthead, *Sparus aurata* Linnaeus 1758, on the coast of Northumberland, England. *Journal of Fish Biology*, 33(6):951, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Merrettm:1988:OTR**

- [1489] N. R. Merrettm and C. Karrer. Occurrence of toothless rattails of the genus *Coryphaenoides* and its possible significance. *Journal of Fish Biology*, 33(6):953–954, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Naesje:1988:SDA**

- [1490] T. F. Næsje, L. P. Hansen, and T. Järvi. Sexual dimorphism in the adipose fin of Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 33

(6):955–956, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1988:SHS**

- [1491] E. A. R. Brown and D. B. C. Scott. A second hermaphrodite specimen of *Coregonus lavaretus* (L.) (Salmonidae, Coregoninae) from Loch Lomond, Scotland. *Journal of Fish Biology*, 33(6):957–958, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Moore:1988:ORE**

- [1492] A. Moore and A. Scott. Observations of recently emerged sea trout, *Salmo trutta* L., fry in a chalk stream, using a low-light underwater camera. *Journal of Fish Biology*, 33(6):959–960, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1988:BRh**

- [1493] Anonymous. Book reviews. *Journal of Fish Biology*, 33(6):961–967, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Margetts:1988:P**

- [1494] A. R. Margetts. Preface. *Journal of Fish Biology*, 33(sA):iii, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cyrus:1988:EEE**

- [1495] D. P. Cyrus. Episodic events and estuaries: effects of cyclonic flushing on the benthic fauna and diet of *Solea bleekeri* (Teleostei) in Lake St Lucia on the south-eastern coast of Africa. *Journal of Fish Biology*, 33(sA):1–7, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Martin:1988:IST**

- [1496] T. J. Martin. Interaction of salinity and temperature as a mechanism for spatial separation of three co-existing species of ambassidae (Cuvier) (Teleostei) in estuaries on the south-east coast of Africa. *Journal of Fish Biology*, 33(sA):9–15, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bamber:1988:PAP**

- [1497] R. N. Bamber and P. A. Henderson. Pre-adaptive plasticity in atherinids and the estuarine seat of teleost evolution. *Journal of Fish Biology*, 33(sA):17–23, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kelley:1988:IES**

- [1498] D. F. Kelley. The importance of estuaries for sea-bass, *Dicentrarchus labrax* (L.). *Journal of Fish Biology*, 33(sA):25–33, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pinto:1988:PDC**

- [1499] L. Pinto. Population dynamics and community structure of fish in the mangroves of pagbilao, Philippines. *Journal of Fish Biology*, 33(sA):35–43, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rogers:1988:SPE**

- [1500] S. I. Rogers. The seasonal partitioning of energy in an estuarine fish, the common goby, *Pomatoschistus microps* Krøyer. *Journal of Fish Biology*, 33(sA):45–50, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Elliott:1988:RFS**

- [1501] M. Elliott, A. H. Griffiths, and C. J. L. Taylor. The role of fish studies in estuarine pollution assessment. *Journal of Fish Biology*, 33(sA):51–61, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Curran:1988:ORP**

- [1502] J. C. Curran and A. R. Henderson. The oxygen requirements of a polluted estuary for the establishment of a migratory salmon, *Salmo salar* L., population. *Journal of Fish Biology*, 33(sA):63–69, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pomfret:1988:BTS**

- [1503] J. R. Pomfret, G. S. Turner, and S. Phillips. Beam trawl surveys as a monitoring tool in polluted estuaries in north-east England. *Journal of Fish Biology*, 33(sA):71–77, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McColl:1988:MPL**

- [1504] N. P. McColl. A model to predict the level of artificial radionuclides in environmental materials in the Severn Estuary and the Bristol Channel. *Journal of Fish Biology*, 33(sA):79–84, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Conlan:1988:DDH**

- [1505] K. Conlan, K. Hendry, K. N. White, and S. J. Hawkins. Disused docks as habitats for estuarine fish: a case study of Preston dock. *Journal of Fish Biology*, 33(sA):85–91, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dempsey:1988:IE**

- [1506] C. H. Dempsey. Ichthyoplankton entrainment. *Journal of Fish Biology*, 33(sA):93–102, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turnpenny:1988:FIE**

- [1507] A. W. H. Turnpenny. Fish impingement at estuarine power stations and its significance to commercial fishing. *Journal of Fish Biology*, 33(sA):103–110, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davies:1988:RIR**

- [1508] J. K. Davies. A review of information relating to fish passage through turbines: implications to tidal power schemes. *Journal of Fish Biology*, 33(sA):111–126, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Solomon:1988:FRN**

- [1509] D. J. Solomon and E. C. E. Potter. First results with a new estuarine fish tracking system. *Journal of Fish Biology*, 33(sA):127–132, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Priede:1988:BAA**

- [1510] I. G. Priede, J. F. de L. G. Solbé, J. E. Nott, K. T. O'Grady, and D. Cragg-Hine. Behaviour of adult Atlantic salmon, *Salmo salar* L., in the estuary of the River Ribble in relation to variations in dissolved oxygen and tidal flow. *Journal of Fish Biology*, 33(sA):133–139, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aprahamian:1988:BTS**

- [1511] M. W. Aprahamian. The biology of the twaite shad, *Alosa fallax fallax* (Lacépède), in the Severn Estuary. *Journal of Fish Biology*, 33(sA):141–152, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Potter:1988:MAS**

- [1512] E. C. E. Potter. Movements of Atlantic salmon, *Salmo salar* L., in an estuary in south-west England. *Journal of Fish Biology*, 33(sA):153–159, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Naismith:1988:MEJ**

- [1513] I. A. Naismith and B. Knights. Migrations of elvers and juvenile European eels, *Anguilla anguilla* L., in the River Thames. *Journal of Fish Biology*, 33(sA):161–175, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coggan:1988:MJD**

- [1514] R. A. Coggan and P. R. Dando. Movements of juvenile Dover sole, *Solea solea* (L.), in the Tamar Estuary, South-western England. *Journal of Fish Biology*, 33(sA):177–184, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Antunes:1988:RAS**

- [1515] M. M. Antunes, P. L. da Cunha, A. P. Duarte, and E. P. Mendonça. Ria de Alvor as a spawning place and a nursery ground. *Journal of Fish Biology*, 33(sA):185–190, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Yañez-Arancibia:1988:SBD**

- [1516] A. Yañez-Arancibia, A. L. Lara-Dominguez, J. L. Rojas-Galaviz, P. Sánchez-Gil, J. W. Day, Jr., and C. J. Madden. Seasonal biomass and diversity of estuarine fishes coupled with tropical habitat heterogeneity (southern Gulf of Mexico). *Journal of Fish Biology*, 33(sA):191–200, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bergman:1988:PNE**

- [1517] M. J. N. Bergman, H. W. van der Veer, and J. J. Zulstra. Plaice nurseries: effects on recruitment. *Journal of Fish Biology*, 33(sA):201–218, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Hassan:1988:GVP**

- [1518] L. A. J. Al-Hassan. Genetic variation and populations structure in *Thryssa hamiltonii* and *Nematalosa nasus* in Iraqi waters. *Journal of*

*Fish Biology*, 33(sA):219–220, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kelley:1988:SCF**

- [1519] D. F. Kelley and P. J. Reay. The shallow creek fish communities of south-west England and west Wales estuaries. *Journal of Fish Biology*, 33(sA):221–222, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1988:SEF**

- [1520] P. A. Henderson. The structure of estuarine fish communities. *Journal of Fish Biology*, 33(sA):223–225, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marchand:1988:IMD**

- [1521] J. Marchand and G. Masson. Inshore migration, distribution, behaviour and feeding activity of sole, *Solea solea* (L.), postlarvae in the Vilaine estuary, France. *Journal of Fish Biology*, 33(sA):227–228, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marchand:1988:SDG**

- [1522] J. Marchand. Seasonal distribution, growth and ecological role of the juvenile sole, *Solea solea* L., population in the Loire estuary, France. *Journal of Fish Biology*, 33(sA):229, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sabriye:1988:SBL**

- [1523] A. S. Sabriye, P. J. Reay, and S. H. Coombs. Sea-bass larvae in coastal and estuarine plankton. *Journal of Fish Biology*, 33(sA):231–233, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wilson:1988:RFM**

- [1524] K. W. Wilson, B. J. D’Arcy, and S. Taylor. The return of fish to the Mersey estuary. *Journal of Fish Biology*, 33(sA):235–238, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hendry:1988:DDH**

- [1525] K. Hendry, K. Conlan, K. N. White, A. Bewsher, and S. J. Hawkins. Dis-used docks as a habitat for estuarine fish: a nationwide appraisal. *Journal of Fish Biology*, 33(sA):239–241, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Robin:1988:CAE**

- [1526] J.-P. Robin. Comparative analysis of the effect of a power station and of small-mesh fisheries on the juvenile populations of smelt and flounder in the Loire estuary: presentation of methods. *Journal of Fish Biology*, 33(sA):243–244, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Aprahamian:1988:MAS**

- [1527] M. W. Aprahamian, C. D. Strange, and C. Dimond. Movement of Atlantic salmon, *Salmo salar* L., into the River Usk, South Wales, in relation to water quality. *Journal of Fish Biology*, 33(sA):245–247, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Costa:1988:TME**

- [1528] M. J. Costa. The Tagus and Mira estuaries (Portugal) and their role as spawning and nursery areas. *Journal of Fish Biology*, 33(sA):249–250, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wheeler:1988:FES**

- [1529] Alwyne Wheeler. Fish in estuaries: a summing up. *Journal of Fish Biology*, 33(sA):251–254, December 1988. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roberts:1989:RMP**

- [1530] C. D. Roberts. Reproductive mode in the percomorph fish genus *Polyprion* Oken. *Journal of Fish Biology*, 34(1):1–9, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Enderlein:1989:MBA**

- [1531] O. Enderlein. Migratory behaviour of adult cisco, *Coregonus albula* L., in the Bothnian Bay. *Journal of Fish Biology*, 34(1):11–18, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Degani:1989:IBS**

- [1532] G. Degani, M. L. Gallagher, and A. Meltzer. The influence of body size and temperature on oxygen consumption of the European eel, *Anguilla anguilla*. *Journal of Fish Biology*, 34(1):19–24, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bahgat:1989:UCM**

- [1533] F. J. Bahgat, P. E. King, and S. E. Shackley. Ultrastructural changes in the muscle tissue of *Clupea harengus* L. larvae induced by acid pH. *Journal of Fish Biology*, 34(1):25–30, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Foscarini:1989:CSS**

- [1534] R. Foscarini. A comparative study of the skin and gill structure in oviparous and viviparous freshwater fish larvae. *Journal of Fish Biology*, 34(1):31–40, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deLeaniz:1989:NHB**

- [1535] C. Garcia de Leaniz and E. Verspoor. Natural hybridization between Atlantic salmon, *Salmo salar*, and brown trout, *Salmo trutta*, in northern Spain. *Journal of Fish Biology*, 34(1):41–46, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cui:1989:BGC**

- [1536] Y. Cui and R. J. Wootton. Bioenergetics of growth of a cyprinid, *Phoxinus phoxinm* (L.): development and testing of a growth model. *Journal of Fish Biology*, 34(1):47–64, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alfei:1989:MAS**

- [1537] L. Alfei, G. Bertoncetto, E. Gelosi, and F. Parvopassu. A morphometric analysis of the spinal motor pool in relation to its target muscle during growth in the trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 34(1):65–78, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gartner:1989:PFM**

- [1538] J. V. Gartner, Jr. and D. E. Zwerner. The parasite faunas of meso- and bathypelagic fishes of Norfolk Submarine Canyon, western North Atlantic. *Journal of Fish Biology*, 34(1):79–95, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bagliniere:1989:PDB**

- [1539] J. L. Baglinière, G. Maise, P. Y. Lebail, and A. Nihouarn. Population dynamics of brown trout, *Salmo trutta* L., in a tributary in Brittany

(France): spawning and juveniles. *Journal of Fish Biology*, 34(1):97–110, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mooij:1989:KIL**

- [1540] W. M. Mooij. A key to the identification of larval bream, *Abramis brama*, white bream, *Blicca bjoerkna*, and roach, *Rutilus rutilus*. *Journal of Fish Biology*, 34(1):111–118, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crisp:1989:OSD**

- [1541] D. T. Crisp and P. A. Carling. Observations on siting, dimensions and structure of salmonid redds. *Journal of Fish Biology*, 34(1):119–134, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bean:1989:BEE**

- [1542] C. W. Bean and I. J. Winfield. Biological and ecological effects of a *Ligula intestinalis* (L.) infestation of the gudgeon, *Gobiogobio* (L.), in Lough Neagh, Northern Ireland. *Journal of Fish Biology*, 34(1):135–147, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jones:1989:PAA**

- [1543] K. A. Jones. The palatability of amino acids and related compounds to rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 34(1):149–160, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Townsend:1989:EMP**

- [1544] C. R. Townsend and M. R. Perrow. Eutrophication may produce population cycles in roach, *Rutilus rutilus* (L.), by two contrasting mechanisms. *Journal of Fish Biology*, 34(1):161–164, January 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ojha:1989:LSE**

- [1545] J. Ojha, N. C. Rooj, A. K. Mittal, and J. S. Datta Munshi. Light and scanning electron microscopic studies on the effect of biocidal plant sap on the gills of a hill stream fish, *Garra lamta* (Ham.). *Journal of Fish Biology*, 34(2):165–170, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bolger:1989:SSI**

- [1546] T. Bolger and P. L. Connolly. The selection of suitable indices for the measurement and analysis of fish condition. *Journal of Fish Biology*, 34(2):171–182, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1989:SDA**

- [1547] A. F. Brown. Seasonal dynamics of the acanthocephalan *Pomphorhynchm laevis* (Müller, 1776) in its intermediate and preferred definitive hosts. *Journal of Fish Biology*, 34(2):183–194, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kjesbu:1989:SAC**

- [1548] O. S. Kjesbu. The spawning activity of cod, *Gadus morhua* L. *Journal of Fish Biology*, 34(2):195–206, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Poulin:1989:ELH**

- [1549] R. Poulin and G. J. Fitzgerald. Early life histories of three sympatric sticklebacks in a salt-marsh. *Journal of Fish Biology*, 34(2):207–221, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mearns:1989:BRS**

- [1550] K. J. Mearns. Behavioural responses of salmonid fry to low amino acid concentrations. *Journal of Fish Biology*, 34(2):223–232, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bakker:1989:CST**

- [1551] Th. C. M. Bakker and P. Sevenster. Changes in the sexual tendency accompanying selection for aggressiveness in the three-spined stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 34(2):233–243, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ibrahim:1989:LFS**

- [1552] A. A. Ibrahim and F. A. Huntingford. Laboratory and field studies on diet choice in three-spined sticklebacks, *Gasterosteus aculeatus* L., in relation to profitability and visual features of prey. *Journal of Fish Biology*, 34(2):245–257, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lubin:1989:UAB**

- [1553] R. T. Lubin, A. W. Rourke, and T. M. Bradley. Ultrastructural alterations in branchial chloride cells of Atlantic salmon, *Salmo salar*, during parr-smolt transformation and early development in sea water. *Journal of Fish Biology*, 34(2):259–272, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Benedetti:1989:HCS**

- [1554] I. Benedetti, A. G. Albano, and L. Mola. Histomorphological changes in some organs of the brown bullhead, *Ictalurus nebulosus* LeSueur, following short- and long-term exposure to copper. *Journal of Fish Biology*, 34(2):273–280, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Frandsen:1989:EPP**

- [1555] F. Frandsen, H. J. Malmquist, and S. S. Snorrason. Ecological parasitology of polymorphic Arctic charr, *Salvelinus alpinus* (L.), in Thingvallavatn, Iceland. *Journal of Fish Biology*, 34(2):281–297, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**North:1989:AAR**

- [1556] E. North and P. Hickley. An appraisal of anglers' catches in the River Severn, England. *Journal of Fish Biology*, 34(2):299–306, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Berrebi:1989:ISN**

- [1557] P. Berrebi, F. Dupont, G. Cattaneo-Berrebi, and A. J. Crivelli. An isozyme study of the natural cyprinid hybrid *Alburnus alburnus* × *Rutilus rubilio* in Greece. *Journal of Fish Biology*, 34(2):307–313, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Junger:1989:CME**

- [1558] H. Junger, K. Kotrschal, and A. Goldschmid. Comparative morphology and ecomorphology of the gut in European cyprinids (Telostei). *Journal of Fish Biology*, 34(2):315–326, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**O'Farrell:1989:OGM**

- [1559] M. M. O'Farrell and R. E. Peirce. The occurrence of a gynandromorphic migratory trout, *Salmo trutta* L. *Journal of Fish Biology*, 34(2):327, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coello:1989:NSS**

- [1560] S. Coello. A new staining schedule for formalin-fixed, glycol methacrylate-embedded fish ovaries. *Journal of Fish Biology*, 34(2): 329–330, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Alabaster:1989:DOT**

- [1561] J. S. Alabaster. The dissolved oxygen and temperature requirements of king salmon, *Oncorhynchus tshawytscha*, in the San Joaquin Delta, California. *Journal of Fish Biology*, 34(2):331–332, February 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roubal:1989:PCG**

- [1562] F. R. Roubal. Pathological changes in the gill filaments of *Acanthopagrus australis* (family Sparidae) associated with the post-settlement growth of a lernaeopodid copepod, *Alella macrotrachelus*. *Journal of Fish Biology*, 34(3):333–342, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bentivegna:1989:GSV**

- [1563] F. Bentivegna and F. Benedetto. Gonochorism and seasonal variations in the gonads of the labrid *Symphodus (Crenilabrus) ocellatus* (Forsskål). *Journal of Fish Biology*, 34(3):343–348, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lim:1989:EFG**

- [1564] A. L. L. Lim and Y. K. Ip. Effect of fasting on glycogen metabolism and activities of glycolytic and gluconeogenic enzymes in the mudskipper *Boleophthalmus boddarti*. *Journal of Fish Biology*, 34(3):349–367, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1989:MDA**

- [1565] P. J. Smith, A. J. Birley, A. Jamieson, and C. A. Bishop. Mitochondrial DNA in the Atlantic cod, *Gadus morhua*: lack of genetic divergence between eastern and western populations. *Journal of Fish Biology*, 34(3):369–373, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gill:1989:HCM**

- [1566] H. S. Gill, A. H. Weatherley, R. Lee, and D. Legere. Histochemical characterization of myotomal muscle of five teleost species. *Journal of*

*Fish Biology*, 34(3):375–386, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Diamant:1989:EAS**

- [1567] A. Diamant. Ecology of the acanthocephalan *Sclerocollum rubrimaris* Schmidt and Paperna, 1978 (Rhadinorhynchidae: Gorgorhynchinae) from wild populations of rabbitfish (genus *Siganus*) in the northern Red Sea. *Journal of Fish Biology*, 34(3):387–397, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Uchida:1989:LCF**

- [1568] K. Uchida, K. Tsukamoto, S. Ishii, R. Ishida, and T. Kajihara. Larval competition for food between wild and hatchery-reared ayu, *Plecoglossm altivelis* Temminck et Schlegel, in culture ponds. *Journal of Fish Biology*, 34(3):399–407, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Henderson:1989:WMB**

- [1569] P. A. Henderson and R. H. A. Holmes. Whiting migration in the Bristol Channel: a predator–prey relationship. *Journal of Fish Biology*, 34(3):409–416, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rajasilta:1989:DME**

- [1570] M. Rajasilta, J. Eklund, J. Kääriä, and K. Ranta-Aho. The deposition and mortality of the eggs of the Baltic herring *Clupea harengus membras* L., on different substrates in the south-west archipelago of Finland. *Journal of Fish Biology*, 34(3):417–427, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Creutzberg:1989:AEP**

- [1571] F. Creutzberg and J. Ij. Witte. An attempt to estimate the predatory pressure exerted by the lesser weever, *Trachinus vipera* Cuvier, in the southern North Sea. *Journal of Fish Biology*, 34(3):429–449, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Ruggerone:1989:GER**

- [1572] G. T. Ruggerone. Gastric evacuation rates and daily ration of piscivorous Coho salmon, *Oncorhynchus kisutch* Walbaum. *Journal of Fish Biology*, 34(3):451–463, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**VanderBank:1989:EDG**

- [1573] F. H. Van der Bank, W. S. Grant, and J. T. Ferreira. Electrophoretically detectable genetic data for fifteen southern African cichlids. *Journal of Fish Biology*, 34(3):465–483, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**MacCrimmon:1989:NAY**

- [1574] H. R. MacCrimmon, B. L. Gots, and R. B. MacGregor. A note on an atypical yellow perch, *Perca flavescens* Mitchill. *Journal of Fish Biology*, 34(3):485–486, March 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:Aa**

- [1575] Anonymous. Announcement. *Journal of Fish Biology*, 34(4):487, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Last:1989:FHC**

- [1576] J. M. Last. The food of herring, *Clupea harengus*, in the North Sea, 1983–1986. *Journal of Fish Biology*, 34(4):489–501, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Roubal:1989:CPS**

- [1577] F. R. Roubal. Comparative pathology of some monogenean and copepod ectoparasites on the gills of *Acanthopagrus australis* (family Sparidae). *Journal of Fish Biology*, 34(4):503–514, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Flett:1989:DRE**

- [1578] P. A. Flett and J. F. Leatherland. Dose-related effects of 17 $\beta$  oestradiol (E<sub>2</sub>) on liver weight, plasma E<sub>2</sub>, protein, calcium and thyroid hormone levels, and measurement of the binding of thyroid hormones to vitellogenin in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 34(4):515–527, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hoffman:1989:DCO**

- [1579] K. S. Hoffman and E. G. Grau. Daytime changes in oocyte development with relation to the tide for the Hawaiian saddleback wrasse, *Thalassoma duperrey*. *Journal of Fish Biology*, 34(4):529–546, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Davidson:1989:RGV**

- [1580] W. S. Davidson, T. P. Birt, and J. M. Green. A review of genetic variation in Atlantic salmon, *Salmo salar* L., and its importance for stock identification, enhancement programmes and aquaculture. *Journal of Fish Biology*, 34(4):547–560, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fernandez-Delgado:1989:AGY**

- [1581] C. Fernández-Delgado, J. A. Hernando, M. Herrera, and M. Bellido. Age and growth of yellow eels, *Anguilla anguilla*, in the estuary of the Guadalquivir river (south-west Spain). *Journal of Fish Biology*, 34(4):561–570, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Olsen:1989:SRJ**

- [1582] K. H. Olsén. Sibling recognition in juvenile Arctic charr, *Salvelinus alpinus* (L.). *Journal of Fish Biology*, 34(4):571–581, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Taylor:1989:LIC**

- [1583] M. Taylor and D. Hoole. *Ligula intestinalis* (L.) (Cestoda: Pseudophyllidea): plerocercoid-induced changes in the spleen and pronephros of roach, *Rutilus rutilus* (L.), and gudgeon, *Gobio gobio* (L.). *Journal of Fish Biology*, 34(4):583–596, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skaala:1989:GDB**

- [1584] Ø. Skaala and G. Nævdal. Genetic differentiation between freshwater resident and anadromous brown trout, *Salmo trutta*, within watercourses. *Journal of Fish Biology*, 34(4):597–605, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1989:DDF**

- [1585] C. R. Kennedy, R. M. Bates, and A. F. Brown. Discontinuous distributions of the fish acanthocephalans *Pomphorhynchm laevis* and *Acanthocephalus anguillae* in Britain and Ireland: an hypothesis. *Journal of Fish Biology*, 34(4):607–619, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Purdy:1989:EBE**

- [1586] J. E. Purdy. The effects of brief exposure to aromatic hydrocarbons on feeding and avoidance behaviour in Coho salmon, *Oncorhynchus kisutch*.

*Journal of Fish Biology*, 34(4):621–629, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robinson:1989:IHR**

- [1587] C. J. Robinson and T. J. Pitcher. The influence of hunger and ration level on shoal density, polarization and swimming speed of herring, *Clupea harengus* L. *Journal of Fish Biology*, 34(4):631–633, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spanier:1989:TSS**

- [1588] E. Spanier, Y. Finkelstein, and B. Raikhlin-Eisenkraft. Toxicity of the saupe, *Sarpa salpa* (Linnaeus, 1758), on the Mediterranean coast of Israel. *Journal of Fish Biology*, 34(4):635–636, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Singh:1989:RAL**

- [1589] B. N. Singh, M. A. Towheed, and J. S. D. Munshi. Respiratory adaptations in the larvae of *Monoptemus cuchia* (Ham.). *Journal of Fish Biology*, 34(4):637–638, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Urfi:1989:HLR**

- [1590] A. J. Urfi and C. L. Talesara. Histomorphology of length-related changes in myotomal muscles of catfish, *Heteropneustes fossilis* (Bloch). *Journal of Fish Biology*, 34(4):639–641, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Partington:1989:MAP**

- [1591] J. D. Partington. A method to allow the production of phylogenetic trees from morphometric data. *Journal of Fish Biology*, 34(4):643–644, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRa**

- [1592] Anonymous. Book reviews. *Journal of Fish Biology*, 34(4):645–652, April 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Galman:1989:FSE**

- [1593] O. R. Galman and R. R. Avtalion. Further study of the embryonic development of *Oreochromis niloticus* (Cichlidae, Teleostei) using scanning electron microscopy. *Journal of Fish Biology*, 34(5):653–664, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pinkney:1989:MSE**

- [1594] A. E. Pinkney, D. A. Wright, and G. M. Hughes. A morphometric study of the effects of tributyltin compounds on the gills of the mummichog, *Fundulus heteroclitus*. *Journal of Fish Biology*, 34(5):665–677, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Radabaugh:1989:SCC**

- [1595] D. C. Radabaugh. Seasonal colour changes and shifting antipredator tactics in darters. *Journal of Fish Biology*, 34(5):679–685, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rincon:1989:RGS**

- [1596] P. A. Rincon and J. Lobon-Cervia. Reproductive and growth strategies of the red roach, *Rutilus arcasii* (Steindachner, 1866), in two contrasting tributaries of the River Duero, Spain. *Journal of Fish Biology*, 34(5):687–705, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burley:1989:MDM**

- [1597] C. C. Burley and S. Vigg. A method for direct measurement of the maximum volume of fish stomachs or digestive tracts. *Journal of Fish Biology*, 34(5):707–714, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Harmelin-Vivien:1989:FPA**

- [1598] M. L. Harmelin-Vivien, R. A. Kaim-Malka, M. Ledoyer, and S. S. Jacob-Abraham. Food partitioning among scorpaenid fishes in Mediterranean seagrass beds. *Journal of Fish Biology*, 34(5):715–734, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kjesbu:1989:OCG**

- [1599] O. S. Kjesbu and H. Kryvi. Oogenesis in cod, *Gadus morhua* L., studied by light and electron microscopy. *Journal of Fish Biology*, 34(5):735–746, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Doggett:1989:UPB**

- [1600] T. A. Doggett and J. E. Harris. Ultrastructure of the peripheral blood leucocytes of *Oreochromis mossambicus*. *Journal of Fish Biology*, 34(5):747–756, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pickering:1989:DSB**

- [1601] A. D. Pickering, T. G. Pottinger, and J. F. Carragher. Differences in the sensitivity of brown trout, *Salmo trutta* L., and rainbow trout, *Salmo gairdneri* Richardson, to physiological doses of cortisol. *Journal of Fish Biology*, 34(5):757–768, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dekker:1989:DRR**

- [1602] W. Dekker. Death rate, recapture frequency and changes in size of tagged eels. *Journal of Fish Biology*, 34(5):769–777, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hlavova:1989:EAB**

- [1603] V. Hlavová. Enzyme activities in the blood plasma of grayling, *Thymallus thymallus* (Linn.), in the breeding season. *Journal of Fish Biology*, 34(5):779–789, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Youngson:1989:EET**

- [1604] A. F. Youngson, L. P. Hansen, B. Jonsson, and T. F. Naesje. Effects of exogenous thyroxine or prior exposure to raised water-flow on the downstream movement of hatchery-reared Atlantic salmon smolts. *Journal of Fish Biology*, 34(5):791–797, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Haug:1989:OWA**

- [1605] T. Haug, E. Kjørsvik, and K. Pittman. Observations on a wild Atlantic halibut larva, *Hippoglossus hippoglossus* (L.). *Journal of Fish Biology*, 34(5):799–801, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Franklin:1989:MOM**

- [1606] C. E. Franklin and W. Davison. S.E.M. observations of morphologically different chloride cells in freshwater-adapted sockeye salmon, *Oncorhynchus nerka*. *Journal of Fish Biology*, 34(5):803–804, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turner:1989:AMT**

- [1607] G. F. Turner and U. Falter. On the adoption of ‘male-typical’ breeding colouration by female mouthbrooding cichlids. *Journal of Fish Biology*, 34(5):805–806, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kolok:1989:RBM**

- [1608] A. S. Kolok. The relationship between maintenance ration and growth rate in two strains of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 34(5):807–809, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hayes:1989:DIS**

- [1609] G. C. Hayes, D. A. Purdie, and J. A. Williams. The distribution of ichthyoplankton in Southampton Water in response to low oxygen levels produced by a *Mesodinium rubrum* bloom. *Journal of Fish Biology*, 34(5):811–813, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRb**

- [1610] Anonymous. Book reviews. *Journal of Fish Biology*, 34(5):815–818, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRc**

- [1611] Anonymous. Books received. *Journal of Fish Biology*, 34(5):818, May 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1989:FSS**

- [1612] D. W. Smith. The feeding selectivity of silver carp, *Hypophthalmichthys molitrix* Val. *Journal of Fish Biology*, 34(6):819–828, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Madsen:1989:PIR**

- [1613] S. S. Madsen and E. T. Naamansen. Plasma ionic regulation and gill  $\text{Na}^+/\text{K}^+$ -ATPase changes during rapid transfer to sea water of yearling rainbow trout, *Salmo gairdneri*: time course and seasonal variation. *Journal of Fish Biology*, 34(6):829–840, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hine:1989:OEG**

- [1614] P. M. Hine and J. M. Wain. Observations on eosinophilic granule cells in peritoneal exudates of eels, *Anguilla amtmilis*. *Journal of Fish Biology*, 34(6):841–853, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**vanDamme:1989:SCK**

- [1615] P. van Damme, S. Appelbaum, and T. Hecht. Sibling cannibalism in Koi carp, *Cyprinus carpio* L., larvae and juveniles reared under controlled

conditions. *Journal of Fish Biology*, 34(6):855–863, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Handy:1989:SAA**

- [1616] R. D. Handy and F. B. Eddy. Surface absorption of aluminium by gill tissue and body mucus of rainbow trout, *Salmo gairdneri*, at the onset of episodic exposure. *Journal of Fish Biology*, 34(6):865–874, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morgan:1989:MCC**

- [1617] M. Morgan and D. E. Wright. Morphology of central compartment and vasculature of the gills of *Lepidosiren paradoxa* (Fitzinger). *Journal of Fish Biology*, 34(6):875–888, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Marconato:1989:CMR**

- [1618] A. Marconato, A. Bisazza, and G. Marin. Correlates of male reproductive success in *Padogobius martensi* (Gobiidae). *Journal of Fish Biology*, 34(6):889–899, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dunn:1989:LLC**

- [1619] S. E. Dunn, A. Murad, and A. H. Houston. Leucocytes and leucopoietic capacity in thermally acclimated goldfish, *Carassim auratus* L. *Journal of Fish Biology*, 34(6):901–911, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Treasurer:1989:MPP**

- [1620] J. W. Treasurer. Mortality and production of 0+ perch, *Perca fluviatilis* L., in two Scottish lakes. *Journal of Fish Biology*, 34(6):913–928, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shiau:1989:EDF**

- [1621] S. Y. Shiau, C. C. Kwok, C. J. Chen, H. T. Hong, and H. B. Hsieh. Effects of dietary fibre on the intestinal absorption of dextrin, blood sugar level and growth of tilapia, *Oreochromis niloticum* × *O. aureus*. *Journal of Fish Biology*, 34(6):929–935, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**OConnell:1989:MAF**

- [1622] M. F. O’Connell and R. J. Gibson. The maturation of anadromous female Atlantic salmon, *Salmo salar* L., stocked in a small pond in urban

St John's, Newfoundland, Canada. *Journal of Fish Biology*, 34(6):937–946, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miglavs:1989:EFR**

- [1623] I. Miglavs and M. Jobling. Effects of feeding regime on food consumption, growth rates and tissue nucleic acids in juvenile Arctic charr, *Salvelinus alpinus*, with particular respect to compensatory growth. *Journal of Fish Biology*, 34(6):947–957, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shustov:1989:ESE**

- [1624] Yu. A. Shustov and I. L. Shchurov. Experimental study of the effect of young salmon, *Salmo salar* L., stamina on their feeding rates in a river. *Journal of Fish Biology*, 34(6):959–961, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Singh:1989:ADF**

- [1625] H. S. Singh and T. V. Reddy. An additional dorsal fin in *Heteropneustes fossilis* (Bloch). *Journal of Fish Biology*, 34(6):963–964, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bodaly:1989:GSS**

- [1626] R. A. Bodaly, R. D. Ward, and C. A. Mills. A genetic stock study of perch, *Perca fluviatilis* L., in Windermere. *Journal of Fish Biology*, 34(6):965–967, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scalia:1989:CAC**

- [1627] S. Scalia, M. Isaksen, and G. W. Francis. Carotenoids of the Arctic charr, *Salvelinus alpinus* (L.). *Journal of Fish Biology*, 34(6):969–970, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kennedy:1989:HPC**

- [1628] C. R. Kennedy and H. H. Williams. Helminth parasite community diversity in a marine fish, *Raja batis* L. *Journal of Fish Biology*, 34(6):971–972, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dominguez:1989:FOH**

- [1629] J. Dominguez, J. C. Pena, and G. González. First occurrence of hermaphrodite pike, *Esox lucius* L., in the Esla basin (Spain). *Jour-*

*Journal of Fish Biology*, 34(6):973–975, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Duran:1989:SSC**

- [1630] M. L. Sanmartín Durán, P. Quinteiro Alonso, A. Rodriguez, and J. A. Fernández. Some Spanish cestode fish parasites. *Journal of Fish Biology*, 34(6):977–978, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRd**

- [1631] Anonymous. Book reviews. *Journal of Fish Biology*, 34(6):979–983, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRe**

- [1632] Anonymous. Books received. *Journal of Fish Biology*, 34(6):983–984, June 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Miglavs:1989:EFR**

- [1633] I. Miglavs and M. Jobling. The effects of feeding regime on proximate body composition and patterns of energy deposition in juvenile Arctic charr, *Salvelinus alpinus*. *Journal of Fish Biology*, 35(1):1–11, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rombout:1989:IISa**

- [1634] J. H. W. M. Rombout and A. A. van den Berg. Immunological importance of the second gut segment of carp. I. Uptake and processing of antigens by epithelial cells and macrophages. *Journal of Fish Biology*, 35(1):13–22, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Vig:1989:EHP**

- [1635] É. Víg and J. Nemcsók. The effects of hypoxia and paraquat on the superoxide dismutase activity in different organs of carp, *Cyprinus carpio* L. *Journal of Fish Biology*, 35(1):23–25, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Everall:1989:IWH**

- [1636] N. C. Everall, N. A. A. Macfarlane, and R. W. Sedgwick. The interactions of water hardness and pH with the acute toxicity of zinc to the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 35(1):27–36, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Macpherson:1989:GES**

- [1637] E. Macpherson, J. Leonart, and P. Sanchez. Gastric emptying in *Scyliorhinus canicula* (L.): a comparison of surface-dependent and non-surface dependent models. *Journal of Fish Biology*, 35(1):37–48, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Deniel:1989:CSS**

- [1638] C. Deniel, C. Le Blanc, and A. Rodriguez. Comparative study of sexual cycles, oogenesis and spawning of two *Soleidae*, *Solea lascaris* (Risso, 1810) and *Solea impar* (Bennet, 1831), on the western coast of Brittany. *Journal of Fish Biology*, 35(1):49–58, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whitehead:1989:ERB**

- [1639] C. Whitehead and J. A. Brown. Endocrine responses of brown trout, *Salmo trutta* L., to acid, aluminium and lime dosing in a Welsh hill stream. *Journal of Fish Biology*, 35(1):59–71, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1989:CTH**

- [1640] J. A. Brown, D. Edwards, and C. Whitehead. Cortisol and thyroid hormone responses to acid stress in the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 35(1):73–84, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wiegand:1989:IDA**

- [1641] M. D. Wiegand, J. M. Hataley, C. L. Kitchen, and L. G. Buchanan. Induction of developmental abnormalities in larval goldfish, *Carassius auratus* L., under cool incubation conditions. *Journal of Fish Biology*, 35(1):85–95, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pilcher:1989:SRI**

- [1642] M. W. Pilcher, P. J. Whitfield, and J. D. Riley. Seasonal and regional infestation characteristics of three ectoparasites of whiting, *Merlangius merlangus* L., in the North Sea. *Journal of Fish Biology*, 35(1):97–110, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Joy:1989:PBB**

- [1643] J. E. Joy and E. Madan. Pathology of black bass hepatic tissue infected with larvae of the tapeworm *Proteocephalum ambloplitis*. *Journal of Fish*

*Biology*, 35(1):111–118, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Madsen:1989:TCE**

- [1644] S. S. Madsen and B. Korsgaard. Time-course effects of repetitive oestradiol-17 $\beta$  and thyroxine injections on the natural spring smolting of Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 35(1):119–128, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wardle:1989:MTM**

- [1645] C. S. Wardle, J. J. Videler, T. Arimoto, J. M. Franco, and P. He. The muscle twitch and the maximum swimming speed of giant bluefin tuna, *Thunnus thynnus* L. *Journal of Fish Biology*, 35(1):129–137, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Epperly:1989:MMB**

- [1646] S. P. Epperly. A meristic, morphometric and biochemical investigation of Atlantic menhaden, *Brevoortia tyrannus* (Latrobe). *Journal of Fish Biology*, 35(1):139–152, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Huntingford:1989:HPI**

- [1647] F. A. Huntingford and R. M. Coulter. Habituation of predator inspection in the three-spined stickleback, *Gasterosteus aculeatus* L. *Journal of Fish Biology*, 35(1):153–154, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Kohli:1989:PSI**

- [1648] M. P. Singh Kohli. The pectoral spine as an indicator of age in *Heteropneustes fossilis* (Bloch). *Journal of Fish Biology*, 35(1):155–156, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smew:1989:FRT**

- [1649] I. A. Smew and I. C. Williams. The first record of the tapeworm *Bothriomonus olrikii* from a fish, the long-spined sea scorpion, *Taurulus bubalis*, in British waters. *Journal of Fish Biology*, 35(1):157–158, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mair:1989:TSM**

- [1650] G. C. Mair. A technique for sampling muscle tissue from live fish. *Journal of Fish Biology*, 35(1):159–160, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sugita:1989:IMJ**

- [1651] H. Sugita, C. Mlyajima, C. Sugiura, M. Iwata, S. Kato, and Y. Deguchi. The intestinal microflora of Japanese migratory fish. *Journal of Fish Biology*, 35(1):161–163, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRf**

- [1652] Anonymous. Book review. *Journal of Fish Biology*, 35(1):165–166, July 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rombout:1989:IISb**

- [1653] J. H. W. M. Rombout, H. E. Bot, and J. J. Taverne-Thiele. Immunological importance of the second gut segment of carp. II. Characterization of mucosal leucocytes. *Journal of Fish Biology*, 35(2):167–178, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rombout:1989:IISc**

- [1654] J. H. W. M. Rombout, A. A. van den Berg, C. T. G. A. van den Berg, P. Witte, and E. Egberts. Immunological importance of the second gut segment of carp. III. Systemic and/or mucosal immune responses after immunization with soluble or particulate antigen. *Journal of Fish Biology*, 35(2):179–186, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Reader:1989:EET**

- [1655] J. P. Reader, N. C. Everall, M. D. J. Sayer, and R. Morris. The effects of eight trace metals in acid soft water on survival, mineral uptake and skeletal calcium deposition in yolk-sac fry of brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 35(2):187–198, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Leatherland:1989:CPT**

- [1656] J. F. Leatherland, N. E. Down, E. M. Donaldson, and H. M. Dye. Changes in plasma thyroid hormone levels in pink salmon, *Oncorhynchus gorbuscha*, during their spawning migration in the Fraser River (Canada). *Journal of Fish Biology*, 35(2):199–205, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Calvo:1989:SDI**

- [1657] J. Calvo. Sexual differences in the increase of white muscle fibres in Argentine hake, *Merluccius hubbsi*, from the San Matias Gulf (Argentina).

*Journal of Fish Biology*, 35(2):207–214, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Wyatt:1989:HCE**

- [1658] R. J. Wyatt and C. R. Kennedy. Host-constrained epidemiology of the fish tapeworm *Ligula intestinalis* (L.). *Journal of Fish Biology*, 35(2): 215–227, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Milligan:1989:RTR**

- [1659] C. L. Milligan, M. S. Graham, and A. P. Farrell. The response of trout red cells to adrenaline during seasonal acclimation and changes in temperature. *Journal of Fish Biology*, 35(2):229–236, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Stefansson:1989:ITU**

- [1660] S. O. Stefansson, G. Naevdal, and T. Hansen. The influence of three unchanging photoperiods on growth and parr-smolt transformation in Atlantic salmon, *Salmo salar* L. *Journal of Fish Biology*, 35(2):237–247, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Segner:1989:DEL**

- [1661] H. Segner, R. Rösch, H. Schmidt, and K. J. von Poepplinghausen. Digestive enzymes in larval *Coregonus lavaretus* L. *Journal of Fish Biology*, 35(2):249–263, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hontela:1989:DEL**

- [1662] A. Hontela, Y. Roy, R. van Collie, K. Lederis, and G. Chevalier. Differential effects of low pH and aluminium on the caudal neurosecretory system of the brook trout, *Salvelinus fontinalis*. *Journal of Fish Biology*, 35(2):265–273, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chellappa:1989:AVE**

- [1663] S. Chellappa, F. A. Huntingford, R. H. C. Strang, and R. Y. Thomson. Annual variation in energy reserves in male three-spined stickleback, *Gasterosteus aculeatm* L. (Pisces, Gasterosteidae). *Journal of Fish Biology*, 35(2):275–286, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Saggers:1989:AMO**

- [1664] B. A. Saggers and M. L. Gould. The attachment of micro-organisms to macrophages isolated from the tilapia *Oreochromis spilurus* Günther. *Journal of Fish Biology*, 35(2):287–294, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Economidis:1989:HAB**

- [1665] P. S. Economidis and Alwyne Wheeler. Hybrids of *Abramis brama* with *Scardinius erythrophthalmus* and *Rutilus rutilus* from Lake Volvi, Macedonia, Greece. *Journal of Fish Biology*, 35(2):295–299, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Greenstreet:1989:EUT**

- [1666] S. P. R. Greenstreet and R. I. G. Morgan. The effect of ultrasonic tags on the growth rates of Atlantic salmon, *Salmo salar* L., parr of varying size just prior to smolting. *Journal of Fish Biology*, 35(2):301–309, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Barbieri:1989:STF**

- [1667] G. Barbieri. Spawning type and fecundity of three sympatric species of tropical fishes in Brazil. *Journal of Fish Biology*, 35(2):311–312, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lee:1989:PCA**

- [1668] K. K. Lee, R. S. Raynard, and A. E. Ellis. The phospholipid composition of Atlantic salmon, *Salmo solar* L., erythrocyte membranes. *Journal of Fish Biology*, 35(2):313–314, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chellappa:1989:DER**

- [1669] S. Chellappa and F. A. Huntingford. Depletion of energy reserves during reproductive aggression in male three-spined stickleback, *Gasterostem aculeatus* L. *Journal of Fish Biology*, 35(2):315–316, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Baggs:1989:OPY**

- [1670] E. M. Baggs and G. I. McT. Cowan. The onset of parasitism of young-of-the-year brook charr, *Salvelinus fontinalis* (Mitchill), in Big Northern Pond, Avalon Peninsula, Newfoundland, Canada. *Journal of Fish Biology*, 35(2):317–319, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRg**

- [1671] Anonymous. Book review. *Journal of Fish Biology*, 35(2):321–322, August 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sayer:1989:ECC**

- [1672] M. D. J. Sayer, J. P. Reader, and R. Morris. The effect of calcium concentration on the toxicity of copper, lead and zinc to yolk-sac fry of brown trout, *Salmo trutta* L., in soft, acid water. *Journal of Fish Biology*, 35(3):323–332, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Whyte:1989:CRR**

- [1673] S. K. Whyte, L. H. Chappell, and C. J. Secombes. Cytotoxic reactions of rainbow trout, *Salmo gairdneri* Richardson, macrophages for larvae of the eye fluke *Diplostomum spathaceum* (Digenea). *Journal of Fish Biology*, 35(3):333–345, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Walsh:1989:OCE**

- [1674] W. A. Walsh, C. Swanson, C.-S. Lee, J. E. Banno, and H. Eda. Oxygen consumption by eggs and larvae of striped mullet, *Mugil cephalus*, in relation to development, salinity and temperature. *Journal of Fish Biology*, 35(3):347–358, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Williams:1989:HSI**

- [1675] J. A. Williams and B. B. Nickol. Histological structure of the intestine and pyloric caeca of the green sunfish, *Lepomis cyanellus* Rafinesque. *Journal of Fish Biology*, 35(3):359–372, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brown:1989:FGB**

- [1676] J. A. Brown, P. Pepin, D. A. Methven, and D. C. Somerton. The feeding, growth and behaviour of juvenile cod, *Gadus morhua* L., in cold environments. *Journal of Fish Biology*, 35(3):373–380, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McLeese:1989:SCI**

- [1677] J. M. McLeese and T. W. Moon. Seasonal changes in the intestinal mucosa of winter flounder, *Pseudopleuronectes americanus* (Walbaum), from Passamaquoddy Bay, New Brunswick. *Journal of Fish Biology*, 35

(3):381–393, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Poncin:1989:EDP**

- [1678] P. Poncin. Effects of different photoperiods on the reproduction of the barbel, *Barbus barbus* (L.), reared at constant temperature. *Journal of Fish Biology*, 35(3):395–400, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rljnsdorp:1989:SDE**

- [1679] A. D. Rljnsdorp and B. Ibelings. Sexual dimorphism in the energetics of reproduction and growth of North Sea plaice, *Pleuronectes platessa* L. *Journal of Fish Biology*, 35(3):401–415, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spanakis:1989:GDB**

- [1680] E. Spanakis, N. Tsimenides, and E. Zouros. Genetic differences between populations of sardine, *Sardina pilchardus*, and anchovy, *Engraulis encrasicolus*, in the Aegean and Ionian seas. *Journal of Fish Biology*, 35(3):417–437, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bres:1989:EPR**

- [1681] M. Bres. The effects of prey relative abundance and chemical cues on prey selection in rainbow trout. *Journal of Fish Biology*, 35(3):439–445, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hartwell:1989:TVA**

- [1682] S. I. Hartwell, J. H. Jin, D. S. Cherry, and J. Cairns, Jr. Toxicity versus avoidance response of golden shiner, *Notemigonus crysoleucas*, to five metals. *Journal of Fish Biology*, 35(3):447–456, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Santos:1989:POE**

- [1683] E. A. Santos and E. P. Santos. Preliminary observations on effects of thyroxine on yolk-sac larvae of *Odontesthes argentinensis* Val., 1835 (Pisces, Atherinidae). *Journal of Fish Biology*, 35(3):457–458, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Robinson:1989:HMP**

- [1684] C. J. Robinson and T. J. Pitcher. Hunger motivation as a promoter of different behaviours within a shoal of herring: selection for homogeneity

in fish shoal? *Journal of Fish Biology*, 35(3):459–460, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hindar:1989:FAS**

- [1685] K. Hindar and J. Nordland. A female Atlantic salmon, *Salmo salar* L., maturing sexually in the parr stage. *Journal of Fish Biology*, 35(3):461–463, September 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clark:1989:FFR**

- [1686] M. R. Clark, K. J. King, and P. J. McMillan. The food and feeding relationships of black oreo, *Allocyttus niger*, smooth oreo, *Pseudocyttus maculatus*, and eight other fish species from the continental slope of the south-west Chatham Rise, New Zealand. *Journal of Fish Biology*, 35(4):465–484, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Radtke:1989:MJB**

- [1687] R. L. Radtke and B. Morales-Nin. Mediterranean juvenile bluefin tuna: life history patterns. *Journal of Fish Biology*, 35(4):485–496, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deJonge:1989:TTG**

- [1688] J. de Jonge, A. J. H. de Ruiter, and R. van den Hurk. Testis-testicular gland complex of two *Tripterygion* species (Blennioidei, Teleostei): differences between territorial and non-territorial males. *Journal of Fish Biology*, 35(4):497–508, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Fernandes:1989:RRO**

- [1689] M. N. Fernandes and F. T. Rantin. Respiratory responses of *Oreochromis niloticus* (Pisces, Cichlidae) to environmental hypoxia under different thermal conditions. *Journal of Fish Biology*, 35(4):509–519, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thuvander:1989:CER**

- [1690] A. Thuvander. Cadmium exposure of rainbow trout, *Salmo gairdneri* Richardson: effects on immune functions. *Journal of Fish Biology*, 35(4):521–529, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Ladich:1989:SPR**

- [1691] F. Ladich. Sound production by the river bullhead, *Cottus gobio* L. (Cottidae, Teleostei). *Journal of Fish Biology*, 35(4):531–538, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Morrison:1989:GJA**

- [1692] B. R. S. Morrison. The growth of juvenile Atlantic salmon, *Salmo salar* L., and brown trout, *Salmo trutta* L., in a Scottish river system subject to cooling-water discharge. *Journal of Fish Biology*, 35(4):539–556, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spry:1989:IDW**

- [1693] D. J. Spry and C. M. Wood. The influence of dietary and waterborne zinc on heat-stable metal ligands in rainbow trout, *Salmo gairdneri* Richardson: quantification by  $^{109}\text{Cd}$  radioassay and evaluation of the assay. *Journal of Fish Biology*, 35(4):557–576, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lucas:1989:EID**

- [1694] M. C. Lucas. Effects of implanted dummy transmitters on mortality, growth and tissue reaction in rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 35(4):577–587, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Phillips:1989:FSR**

- [1695] M. J. Phillips. The feeding sounds of rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 35(4):589–592, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rasotto:1989:AHG**

- [1696] M. B. Rasotto and E. Zulian. Abnormal hermaphroditism in *Gambusia affinis holbrooki* from a hot spring of north-eastern Italy. *Journal of Fish Biology*, 35(4):593–595, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Goolish:1989:COD**

- [1697] E. M. Goolish. A comparison of oxygen debt in small and large rainbow trout, *Salmo gairdneri* Richardson. *Journal of Fish Biology*, 35(4):597–598, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Buchmann:1989:RBH**

- [1698] K. Buchmann. Relationship between host size of *Anguilla anguilla* and the infection level of the monogeneans *Pseudodactylogyrrus* spp. *Journal of Fish Biology*, 35(4):599–601, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:BRh**

- [1699] Anonymous. Book reviews. *Journal of Fish Biology*, 35(4):603–606, October 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Brulé:1989:AEP**

- [1700] T. Brulé. Analysis of the enzyme polymorphism in a plaice, *Pleuronectes platessa* L., population from the north-west coast of Brittany, France. *Journal of Fish Biology*, 35(5):607–620, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Dorman:1989:SAB**

- [1701] J. A. Dorman. Some aspects of the biology of the garfish *Belone belone* (L.) from southern Ireland. *Journal of Fish Biology*, 35(5):621–629, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Seiwald:1989:HFS**

- [1702] M. Seiwald and R. A. Patzner. Histological, fine-structural and histochemical differences in the testicular glands of gobiid and blenniid fishes. *Journal of Fish Biology*, 35(5):631–640, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Spanier:1989:FAC**

- [1703] E. Spanier, S. Pisanty, M. Tom, and G. Almog-Shtayer. The fish assemblage on a coralligenous shallow shelf off the Mediterranean coast of northern Israel. *Journal of Fish Biology*, 35(5):641–649, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hamilton:1989:PGC**

- [1704] K. E. Hamilton, A. Ferguson, J. B. Taggart, T. Tómasson, A. Walker, and E. Fahy. Post-glacial colonization of brown trout, *Salmo trutta* L.: Ldh-5 as a phylogeographic marker locus. *Journal of Fish Biology*, 35(5):651–664, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Crozier:1989:ADB**

- [1705] W. W. Crozier and I. J. J. Moffett. Amount and distribution of biochemical-genetic variation among wild populations and a hatchery stock of Atlantic salmon, *Salmo salar* L., from north-east Ireland. *Journal of Fish Biology*, 35(5):665–677, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beddington:1989:LTC**

- [1706] J. R. Beddington, C. A. Mills, F. Beards, M. J. Minski, and J. N. B. Bell. Long-term changes in strontium-90 concentrations within a freshwater predator–prey system. *Journal of Fish Biology*, 35(5):679–686, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hynes:1989:MDG**

- [1707] R. A. Hynes, E. J. Duke, and P. Joyce. Mitochondrial DNA as a genetic marker for brown trout, *Salmo trutta* L., populations. *Journal of Fish Biology*, 35(5):687–701, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Moser:1989:RMJ**

- [1708] M. L. Moser and W. F. Hettler. Routine metabolism of juvenile spot, *Leiostomus xanthurus* (Lacépède), as a function of temperature, salinity and weight. *Journal of Fish Biology*, 35(5):703–707, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hlnterleitner:1989:PEA**

- [1709] S. Hlnterleitner, J. Thurner-Flür, W. Wieser, and N. El-Flky. Profiles of enzyme activity in larvae of two cyprinid species with contrasting life styles (Cyprinidae; Teleostei). *Journal of Fish Biology*, 35(5):709–718, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Munro:1989:PLM**

- [1710] M. A. Munro, P. J. Whitfield, and R. Diffley. *Pomphorhynchus laevis* (Müller) in the flounder, *Platichthys flesus* L., in the tidal River Thames: population structure, microhabitat utilization and reproductive status in the field and under conditions of controlled salinity. *Journal of Fish Biology*, 35(5):719–735, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Handy:1989:VEI**

- [1711] R. D. Handy, F. B. Eddy, and G. Romain. In vitro evidence for the ionoregulatory role of rainbow trout mucus in acid, acid/aluminium and zinc toxicity. *Journal of Fish Biology*, 35(5):737–747, November 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Anonymous:1989:Ab**

- [1712] Anonymous. Announcement. *Journal of Fish Biology*, 35(6):i, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1989:DSI**

- [1713] N. F. Smith, C. Talbot, and F. B. Eddy. Dietary salt intake and its relevance to ionic regulation in freshwater salmonids. *Journal of Fish Biology*, 35(6):749–753, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Magnhagen:1989:BBI**

- [1714] C. Magnhagen and L. Kvarnemo. Big is better: the importance of size for reproductive success in male *Pomatoschistus minutus* (Pallas) (Pisces, Gobiidae). *Journal of Fish Biology*, 35(6):755–763, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Shuter:1989:ETP**

- [1715] B. J. Shuter, P. E. Ihssen, D. L. Wales, and E. J. Snucins. The effects of temperature, pH and water hardness on winter starvation of young-of-the-year smallmouth bass, *Micropterus dolomieu* Lacépède. *Journal of Fish Biology*, 35(6):765–780, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Sharp:1989:IRW**

- [1716] G. J. E. Sharp, A. W. Pike, and C. J. Secombes. The immune response of wild rainbow trout, *Salmo gairdneri* Richardson, to naturally acquired plerocercoid infections of *Diphyllobothrium dendriticum* (Nitzsch, 1824) and *D. ditremum* (Creplin, 1825). *Journal of Fish Biology*, 35(6):781–794, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cui:1989:GFA**

- [1717] Y. Cui and R. J. Wootton. Grouping fails to affect the growth and energy budget of a cyprinid, *Phoxinus phoxinus* (L.). *Journal of Fish Biology*, 35(6):795–798, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Turner:1989:ILM**

- [1718] G. F. Turner, T. J. Pitcher, and A. S. Grimm. Identification of the Lake Malaŵi *Oreochromis* (Nyasalapia) spp. using multivariate morphometric techniques. *Journal of Fish Biology*, 35(6):799–812, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Mugiya:1989:ORI**

- [1719] Y. Mugiya and T. Uchimura. Otolith resorption induced by anaerobic stress in the goldfish, *Carassius auratus*. *Journal of Fish Biology*, 35(6):813–818, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Arefjev:1989:KVS**

- [1720] V. A. Arefjev. Karyotype variability in successive generations after hybridization between the great sturgeon, *Huso huso* (L.), and the sterlet, *Acipenser ruthenus* L. *Journal of Fish Biology*, 35(6):819–828, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Davenport:1989:OCL**

- [1721] J. Davenport and V. Thorsteinsson. Observations on the colours of lump-suckers, *Cyclopterus lumpus* L. *Journal of Fish Biology*, 35(6):829–838, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Moran:1989:CMA**

- [1722] P. Mořan, A. M. Pendás, E. García-Vázquez, and A. R. Linde. Chromosomal and morphological analysis of two populations of *Salmo trutta* sbp. *fario* employed in repopulation. *Journal of Fish Biology*, 35(6):839–843, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Burton:1989:IVE**

- [1723] D. Burton and M. P. M. Burton. Individual variability in the epidermis of prespawning inshore winter flounder, *Pseudopleuronectes americanus*. *Journal of Fish Biology*, 35(6):845–853, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**McWilliams:1989:KCS**

- [1724] P. G. McWilliams and K. L. Shephard. Kinetic characteristics of the sodium uptake mechanism during the development of embryos and fry of Atlantic salmon, *Salmo salar* L., in an improved water quality. *Journal*

of *Fish Biology*, 35(6):855–868, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Polunin:1989:LED**

- [1725] N. V. C. Polunin and E. B. Brothers. Low efficiency of dietary carbon and nitrogen conversion to growth in an herbivorous coral-reef fish in the wild. *Journal of Fish Biology*, 35(6):869–879, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Everall:1989:EWH**

- [1726] N. C. Everall, N. A. A. Macfarlane, and R. W. Sedgwick. The effects of water hardness upon the uptake, accumulation and excretion of zinc in the brown trout, *Salmo trutta* L. *Journal of Fish Biology*, 35(6):881–892, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Gulland:1989:FPT**

- [1727] J. A. Gulland. Fish populations and their management. *Journal of Fish Biology*, 35(sA):1–9, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pauly:1989:FCT**

- [1728] D. Pauly. Food consumption by tropical and temperate fish populations: some generalizations. *Journal of Fish Biology*, 35(sA):11–20, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Scott:1989:YFD**

- [1729] M. T. Scott and L. A. Nielsen. Young fish distribution in backwaters and main-channel borders of the Kanawha River, West Virginia. *Journal of Fish Biology*, 35(sA):21–27, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Houde:1989:SEE**

- [1730] E. D. Houde. Subtleties and episodes in the early life of fishes. *Journal of Fish Biology*, 35(sA):29–38, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Laprise:1989:OCL**

- [1731] R. Laprise and J. J. Dodson. Ontogenetic changes in the longitudinal distribution of two species of larval fish in a turbid well-mixed estuary. *Journal of Fish Biology*, 35(sA):39–47, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Heath:1989:CSE**

- [1732] M. Heath and K. Richardson. Comparative study of early-life survival variability of herring *Clupea harengus*, in the north-eastern Atlantic. *Journal of Fish Biology*, 35(sA):49–57, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Tsukamoto:1989:SDM**

- [1733] K. Tsukamoto, H. Kuwada, J. Hirokawa, M. Oya, S. Sekiya, H. Fujimoto, and K. Imaizumi. Size-dependent mortality of red sea bream, *Pagrus major*, juveniles released with fluorescent otolith-tags in News Bay, Japan. *Journal of Fish Biology*, 35(sA):59–69, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Lough:1989:MCH**

- [1734] R. G. Lough and G. R. Bolz. The movement of cod and haddock larvae onto the shoals of Georges Bank. *Journal of Fish Biology*, 35(sA):71–79, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Al-Hossaini:1989:OMI**

- [1735] M. Al-Hossaini, Q. Liu, and T. J. Pitcher. Otolith microstructure indicating growth and mortality among plaice, *Pleuronectes platessa* L., post-larval sub-cohorts. *Journal of Fish Biology*, 35(sA):81–90, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Elliott:1989:CPC**

- [1736] J. M. Elliott. The critical-period concept for juvenile survival and its relevance for population regulation in young sea trout, *Salmo trutta*. *Journal of Fish Biology*, 35(sA):91–98, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Helle:1989:RBS**

- [1737] J. H. Helle. Relation between size-at-maturity and survival of progeny in chum salmon, *Oncorhynchus keta* (Walbaum). *Journal of Fish Biology*, 35(sA):99–107, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Schneider:1989:ISS**

- [1738] D. C. Schneider. Identifying the spatial scale of density-dependent interaction of predators with schooling fish in the southern Labrador Cur-

rent. *Journal of Fish Biology*, 35(sA):109–115, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bromley:1989:EDD**

- [1739] P. J. Bromley. Evidence for density-dependent growth in North Sea gadoids. *Journal of Fish Biology*, 35(sA):117–123, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Townsend:1989:PCF**

- [1740] C. R. Townsend. Population cycles in freshwater fish. *Journal of Fish Biology*, 35(sA):125–131, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Palomera:1989:FME**

- [1741] I. Palomera and J. Lleonart. Field mortality estimates of anchovy larvae, *Engraulis encrasicolus*, in the western Mediterranean. *Journal of Fish Biology*, 35(sA):133–138, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Borisov:1989:LTV**

- [1742] V. M. Borisov and A. A. Elizarov. Long-term variations of biotic and abiotic conditions in the ecosystem of the Barents Sea. *Journal of Fish Biology*, 35(sA):139–144, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Siddeek:1989:ENM**

- [1743] M. S. M. Siddeek. The estimation of natural mortality in Irish Sea plaice, *Pleuronectes platessa* L., using tagging methods. *Journal of Fish Biology*, 35(sA):145–154, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rose:1989:PVC**

- [1744] G. A. Rose and W. C. Leggett. Predicting variability in catch-per-effort in Atlantic cod, *Gadus morhua*, trap and gillnet fisheries. *Journal of Fish Biology*, 35(sA):155–161, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Coutin:1989:ELT**

- [1745] P. C. Coutin and A. I. Payne. The effects of long-term exploitation of demersal fish populations off the coast of Sierra Leone, West Africa. *Journal of Fish Biology*, 35(sA):163–167, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).



**Liu:1989:AFL**

- [1746] Q. Liu, T. Pitcher, and M. Al-Hossaini. Ageing with fisheries length-frequency data, using information about growth. *Journal of Fish Biology*, 35(sA):169–177, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Livingston:1989:KFS**

- [1747] P. A. Livingston. Key fish species, northern fur seals, *Callorhinus ursinus*, and fisheries interactions involving walleye pollock, *Theragra chalcogramma*, in the eastern Bering Sea. *Journal of Fish Biology*, 35(sA):179–186, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**desClers:1989:MRD**

- [1748] S. des Clers. Modelling regional differences in ‘sealworm’, *Pseudoterranova decipiens* (Nematoda, Ascaridoidea), infections in some North Atlantic cod, *Gadus morhua*, stocks. *Journal of Fish Biology*, 35(sA):187–192, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jamieson:1989:DHP**

- [1749] A. Jamieson and A. J. Birley. The demography of a haemoglobin polymorphism in the Atlantic cod, *Gadus morhua* L. *Journal of Fish Biology*, 35(sA):193–204, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Verspoor:1989:GVM**

- [1750] E. Verspoor and W. C. Jordan. Genetic variation at the me-2 locus in the Atlantic salmon within and between rivers: evidence for its selective maintenance. *Journal of Fish Biology*, 35(sA):205–213, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Chadwick:1989:RTP**

- [1751] E. M. P. Chadwick and R. R. Claytor. Run timing of pelagic fishes in Gulf of St Lawrence: area and species effects. *Journal of Fish Biology*, 35(sA):215–223, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Skulason:1989:SSE**

- [1752] S. Skúlason, S. S. Snorrason, D. L. G. Noakes, M. M. Ferguson, and H. J. Malmquist. Segregation in spawning and early life history among

polymorphic Arctic charr, *Salvelinus alpinus*, in Thingvallavatn, Iceland. *Journal of Fish Biology*, 35(sA):225–232, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Bernatchez:1989:PBI**

- [1753] L. Bernatchez, J. J. Dodson, and S. Boivin. Population bottlenecks: influence on mitochondrial DNA diversity and its effect in coregonine stock discrimination. *Journal of Fish Biology*, 35(sA):233–244, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Jorstad:1989:GVP**

- [1754] K. E. Jørstad and G. Nævdal. Genetic variation and population structure of cod, *Gadus morhua* L., in some fjords in northern Norway. *Journal of Fish Biology*, 35(sA):245–252, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hovey:1989:MDA**

- [1755] S. J. Hovey, D. P. F. King, D. Thompson, and A. Scott. Mitochondrial DNA and allozyme analysis of Atlantic salmon, *Salmo salar* L., in England and Wales. *Journal of Fish Biology*, 35(sA):253–260, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**deLeaniz:1989:GDC**

- [1756] C. Garcia de Leániz, E. Verspoor, and A. D. Hawkins. Genetic determination of the contribution of stocked and wild Atlantic salmon, *Salmo salar* L., to the angling fisheries in two Spanish rivers. *Journal of Fish Biology*, 35(sA):261–270, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Hart:1989:PRU**

- [1757] P. J. B. Hart. Predicting resource utilization: the utility of optimal foraging models. *Journal of Fish Biology*, 35(sA):271–277, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Cowx:1989:IBR**

- [1758] I. G. Cowx. Interaction between the roach, *Rutilus rutilus*, and dace, *Leuciscus leuciscus*, populations in a river catchment in south-west England. *Journal of Fish Biology*, 35(sA):279–284, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beall:1989:IRB**

- [1759] E. Beall, M. Heland, and C. Marty. Interspecific relationships between emerging Atlantic salmon, *Salmo salar*, and Coho salmon, *Oncorhynchus*

*kisutch*, juveniles. *Journal of Fish Biology*, 35(sA):285–293, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Thorpe:1989:DVS**

- [1760] J. E. Thorpe. Developmental variation in salmonid populations. *Journal of Fish Biology*, 35(sA):295–303, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Agnalt:1989:LTC**

- [1761] A.-L. Agnalt. Long-term changes in growth and age at maturity of mackerel, *Scomber scombrus* L., from the North Sea. *Journal of Fish Biology*, 35(sA):305–311, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Danzmann:1989:GVC**

- [1762] R. G. Danzmann, M. M. Ferguson, and F. W. Allendorf. Genetic variability and components of fitness in hatchery strains of rainbow trout. *Journal of Fish Biology*, 35(sA):313–319, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Martin:1989:NSA**

- [1763] T. J. Martin. Niche separation in Ambassis (Pisces: Perciformes) species co-existing in estuaries of south-east Africa. *Journal of Fish Biology*, 35(sA):321–328, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Judd:1989:RCS**

- [1764] A. G. Judd and M. Hovland. The role of chemosynthesis in supporting fish stocks in the North Sea. *Journal of Fish Biology*, 35(sA):329–330, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Clemmesen:1989:RDR**

- [1765] C. M. Clemmesen. RNA/DNA ratios of laboratory-reared and wild herring larvae determined with a highly sensitive fluorescence method. *Journal of Fish Biology*, 35(sA):331–333, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Rowell:1989:DFG**

- [1766] C. Rowell, K. Stokes, and R. Law. Does fishing generate selection differentials? *Journal of Fish Biology*, 35(sA):335–337, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Monaghan:1989:TSS**

- [1767] P. Monaghan, J. D. Uttley, and J. D. Okill. Terns and sandeels: seabirds as indicators of changes in marine fish populations. *Journal of Fish Biology*, 35(sA):339–340, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Pierce:1989:DTC**

- [1768] G. J. Pierce, J. S. W. Diack, and P. R. Boyle. Digestive tract contents of seals in the Moray Firth area of Scotland. *Journal of Fish Biology*, 35(sA):341–343, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Smith:1989:ESS**

- [1769] P. J. Smith, A. J. Birley, and A. Jamieson. Electrophoretic studies and the stock concept in marine fishes. *Journal of Fish Biology*, 35(sA):345–346, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Almatar:1989:ECC**

- [1770] S. M. Almatar. Energy content of Clyde spring-spawning herring, *Clupea harengus* L. *Journal of Fish Biology*, 35(sA):347–349, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Titus:1989:SAA**

- [1771] R. G. Titus and H. Mosegaard. Smolting at age 1 and its adaptive significance for migratory trout, *Salmo trutta* L., in a small Baltic-coast stream. *Journal of Fish Biology*, 35(sA):351–353, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).

**Beverton:1989:CAS**

- [1772] R. J. H. Beverton. Closing address: The symposium in perspective. *Journal of Fish Biology*, 35(sA):355–363, December 1989. CODEN JFIBA9. ISSN 0022-1112 (print), 1095-8649 (electronic).