



Arctic Development

***A Bibliography Of The Arctic Char,  
Salvelinus Alpinus (L.) Complex; 1981  
Through 1984***

**Type of Study: Resource Management**

***Fisheries, Arctic Char***

***Date of Report: 1985***

***Author: Marshall, K E***

***Catalogue Number: 3-25-3***

© Minister of Supply and Services Canada 1985

Cat. no. FS 97-6/1345E ISSN 0706-6457

Correct citation for this publication is:

MARSHALL, K. E., and M. LAYTON. 1985. A bibliography of the arctic charr,  
Salvelinus alpinus (L.) complex: 1981 through 1984. Can. Tech. Rep.  
Fish. Aquat. Sci. 1345: iv + 16 p.

## TABLE OF CONTENTS

	Page
ABSTRACT/RESUME . . . . .	iv
INTRODUCTION . . . . .	1
FORMAT . . . . .	1
Author index . . . . .	1
Taxonomic index . . . . .	1
Geographic index . . . . .	1
Subject index . . . . .	1
NOTES ON USING THE INDICES . . . . .	1
CONCLUSION . . . . .	1
ACKNOWLEDGMENTS . . . . .	1
AUTHOR INDEX . . . . .	2
TAXONOMIC INDEX . . . . .	10
GEOGRAPHIC INDEX . . . . .	12
SUBJECT INDEX . . . . .	13

## ABSTRACT

MARSHALL, K.E., and M. LAYTON 1985 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex: 1981 through 1984. Can. Tech. Rep. Fish. Aquat. Sci. 1345: iv + 16 p.

Lists references published between 1981 and 1984. In addition to Arctic charr, Salvelinus alpinus (Linnaeus), of North America and Europe, the bibliography covers the other closely related taxa inhabiting the waters of Russia and Japan, including the Dolly Varden, S. malma (Walbaum) and white-spotted char, S. leucomaenis (Pallas). The bibliography proper is in alphabetical order by author. Taxonomic, geographic and subject indices are provided.

Key words: bibliographies; Dolly Varden; Salmo alpinus.

## RESUME

MARSHALL, K.E., and M. LAYTON. 1985 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex: 1981 through 1984. Can. Tech. Rep. Fish. Aquat. Sci. 1345: iv + 16 p.

Comprend ouvrages publiés depuis 1981 jusqu'à 1984. L'auteur répertorie non seulement les ouvrages relatifs à l'omble chevalier, Salvelinus alpinus (Linnaeus), mais aussi ceux portant sur les espèces apparentées qui vivent dans les eaux de la Russie et du Japon, y compris la Dolly Varden, S. malma (Walbaum) et l'omble, Salvelinus leucomaenis (Pallas). La bibliographie elle-même est en ordre alphabétique selon les auteurs. Elle contient également des index taxinomiques et géographiques et un index des sujets.

Mets-class: bibliographies; Dolly Varden; Salmo alpinus.

## INTRODUCTION

In 1981 a revised bibliography on the Arctic charr was published as Technical Report 1004; it included those references from Technical Report 621 (1977).

This bibliography is an update of Technical Report 1004. Most of the references in this report were published during the period 1981 through 1984. There are some references dated prior to 1981 which were not included in Technical Report 1004.

Since Technical Report 1004 was published, new references have been obtained from a profile search for Salvelinus on the CAN/SDI Service. Computer searches on a variety of data bases have also been made and some additional references have been obtained.

Where possible the original reference has been checked for accuracy but, as all were not available, there may be some errors in citation.

## FORMAT

The format adopted is similar to that used in Technical Report 1004. The references in this **bibliography** have not been numbered as in the previous reports, therefore the citations in the **taxonomic**, geographic and subject indexes are to author and year rather than to number.

The bibliography is divided into four sections:

### 1. Author Index

References are listed in alphabetical order by author. Works by the same author are arranged by year of publication, the oldest being listed first. Papers written in cooperation with others are listed after those by the senior author alone in alphabetical order by second author. There are no cross references from junior authors.

This index is the bibliography proper. As far as possible the title of the paper in the language in which it is written is given following the year of publication. If this title is enclosed in brackets [], this title is not given in the original work. A title enclosed in parentheses is taken from the publication (or its translation) but is in a language, usually English, other than that in which the original paper is written. Russian titles have been transliterated. Japanese titles have been translated, using the title in English from the original journal when this is available. Accents and other diacritical marks have been omitted.

Abbreviations for journals have been made according to the Serial Sources for the 810S1S Data Base Volume 1983. Those journals not listed in this work have been abbreviated following the same format except in those cases where it has not been possible to identify for certain the full title of the journal in question. In this case, the abbreviation has been given in the form found.

### 2. Taxonomic Index

This lists, in alphabetical order, the various **subgeneric** taxa which have been used by authors for fish from the complex. No distinction has been made as to the status ascribed to that taxon by an author.

### 3. Geographic Index

This index identifies the geographic areas, when this is of significance, covered by the reference. The two main divisions are into the **Palaearctic** and **Nearctic** Regions. Each region is broken down into countries. The larger countries may be subdivided into States, Provinces or other subdivisions. References are only listed under the most specific heading.

### 4. Subject Index

The subject headings chosen are not taken from any standard thesaurus. The headings in this report are similar to those used in Technical Report 1004.

As many of the references have not been seen in the original, the indexing has been based on the information given by the citing source. It is, therefore, probable that in some cases, information is present in some papers on subjects not indicated in these indexes.

## NOTES ON USING THE INDICES

For the benefit of those not familiar with the type of index provided, these notes may be of some help.

To locate references on the reproduction of charr in England, for example, compare the list of references under the heading "England" in the geographic index with those under "reproduction" in the subject index. Those references which occur in both lists are potentially relevant references. To find the full bibliographic details I look up the reference in the author index.

## CONCLUSION

This bibliography, as with all others, cannot be complete. Further updates will be issued as further references are collected. It would be much appreciated if authors would forward details of any references that have not been included as well as any corrected references to the following address:

K. E. Marshall  
Head, Scientific Information Services and  
Library  
Freshwater Institute Library  
501 University Crescent  
Winnipeg, Manitoba, Canada R3T 2N6

## ACKNOWLEDGMENTS

Thanks to those individuals who sent details of references missing from the last bibliography. Thanks also go to Vicki Siegers

for typing the initial report and to Lesley Fletcher and Carol Catt for preparing the final copy for the printers.

#### AUTHOR INDEX

- ALTUKHOV, Yu.P. 1982 Biochemical population genetics and speciation. *Evolution* 36(6): 1168-1181.
- AMANN, E. 1980 Limnologische und fischereiliche untersuchungen am Suenser See (Vorarlberg). (Limnological and fishery-biological investigations in the Suenser See (Vorarlberg, Austria).) *Oesterr. Fisch.* 33(11-12): 205-215.
- ANDERSEN, R. 1982 Lake spawning brown trout, *Salmo trutta* and Arctic char, *Salvelinus alpinus* with common spawning area in Lake Selura, southwestern Norway. *Fauna (Oslo)* 35(4): 162-168.
- ANDERSSON, L., N. RYMAN, and G. STAHL. 1983 Protein loci in the Arctic charr, *Salvelinus alpinus* L.: electrophoretic expression and genetic variability patterns. *J. Fish Biol.* 23(1): 75-94.
- BAGI RYAN, S.Sh. 1981 O primeneni i metodov chislennoj taksonomii dlya razdeleniya dvukh simpatricheskikh gruppirovok gol'tsa ozera Azabach'e. (On the application of numerical taxonomy methods for identification of two sympatric groups of chars from Lake Azabach'e.) *Biol. Nauki (Mosk.)* 1: 107-110.
- BAKKE, T.A. 1982 A re-description of *Ptyloodistomum umblae* Digenea Gorgoderidae. *Mol. Biochem. Parasitol.* 1982 suppl.: 324-325.
- BALON, E.K. 1982 Mark Morton and his 'Dolly Varden' - victim of piscatorial prejudgete. *Environ. Biol. Fishes* 7(1): 3-5.
- BARBER, F.G. 1978 Speculation concerning fish populations in the water of the Hudson Bay system. *Can. Fish. Mar. Serv. Tech. Rep.* 829: iii + 6 p.
- BATTERMAN, A.R., and P.M. COOK. 1981 Determination of mineral fiber concentrations in fish tissues. *Can. J. Fish. Aquat. Sci.* 38(8): 952-959.
- BELGHAUG, R., and K.B. DOVING. 1977 Odour threshold determined by studies of the induced waves in the olfactory bulb of the char (*Salmo alpinus* L.). *Comp. Biochem. Physiol. A. Comp. Physiol.* 57(3): 327-330.
- BLACK, G.A. 1982 Zoogeography of *Cystidicola cristovomeri* in char *Salvelinus* spp. *Mol. Biochem. Parasitol.* 1982 suppl.: 351-352.
- BLACK, G.A. 1983 Origin, distribution, and postglacial dispersal of a swimbladder nematode, *Cystidicola stigmatura*. *Can. J. Fish. Aquat. Sci.* 40(8): 1244-1253.
- BLACK, G.A., and M.W. LANKESTER. 1981 The transmission, life span, and population biology of *Cystidicola cristovomeri* White, 1941 (Nematoda: Habronematoidea) in char, *Salvelinus* spp. *Can. J. Zool.* 59(3): 498-509.
- BORISOVETS, E.F. 1982 Diskriminantny analiz prokhodnykh gol'tsov roda *Salvelinus* (Salmonidae) Chukotski. (Discriminate analysis of diadromous chars of the genus *Salvelinus* (Salmonidae) from the Chukotski' la.) *Vopr. Ikhtiol.* 22(3): 365-373. (J. Ichthyol. 22(3): 11-19)
- BRANNON, E.L., R.P. WHITMAN, and T.P. QUINN. 1984 Responses of returning adult coho salmon to home water and population-specific odors. *Trans. Am. Fish. Soc.* 113(3): 374-377.
- BUTORINA, T.E. 1980 Ekologicheskij analiz parazitofauny gol'tsov (*Salvelinus*) reki Kamchatki. (Ecological analysis of the parasite fauna of chars (*Salvelinus*) from the Kamchatka River.) In S.M. Konovalov (ed.) *Populyatsionnaya biologiya i sistematika lososevykh*. (Population biology and taxonomy of Salmonidae.) Vladi vostok (USSR) dvntan S.S.S.R. 18.
- BUTORINA, T.E. 1983 Chislennost' i migratsii gol'sov ozera azabach'ego (Kamchatka). (Abundance and migrations of chars from Azabach'e Lake (Kamchatka).) *Biol. Morya* 1: 29-36. (Sov. J. Mar. Biol. 9(1): 26-32)
- BUTORINA, T.E., O.N. PUGACHEV, and P.P. KHOKHLOV. 1980 (Nekotorye voprosy ekologii zoogeografii gol'tsov roda *Salvelinus* tikhookeanskogo bassejna. (On the ecology and zoogeography of the genus *Salvelinus* in the Pacific Ocean Basin.) In S.M. Konovalov (ed.) *Populyatsionnaya biologiya i sistematika lososevykh*. (Population biology and taxonomy of Salmonidae.) Vladi vostok (USSR) dvntan S.S.S.R. 18: 82 p.
- BUTSUK, S.V., and D.I. BESSONOV. 1981 Direct current electric field in some teleost species: effect of medium salinity. *J. Comp. Physiol. A. Sens. Neural Behav. Physiol.* 141(2): 277-282.
- CANADA DEPARTMENT OF FISHERIES AND OCEANS. 1984a Arctic charr. Underwater World. Minister of Supply and Services, Ottawa. 6 p. (Also available in French)
- CANADA DEPARTMENT OF FISHERIES AND OCEANS. 1984b Arctic char (*Salvelinus alpinus*), p. 3-4. In Selected freshwater fish. Underwater World. Minister of Supply and Services, Ottawa. (Also available in French)
- CANADA DEPARTMENT OF FISHERIES AND OCEANS. 1984c Fisheries operations. The salmonid fisheries of Labrador in 1983. Canada, Department of Fisheries and Oceans, St. John's, NF. 11 p.
- CARDER, G.W. 1981 Data from the commercial fishery for Arctic charr, *Salvelinus alpi-*

- nus (Linnaeus), in the Cambridge Bay area, Northwest Territories, 1979-80. Can. Data Rep. Fish. Aquat. Sci. 284: v + 22 p.
- CARDER, G.W. 1983 Data from the commercial fishery for Arctic charr, Salvelinus alpinus (Linnaeus), in the Cambridge Bay and Rankin Inlet areas, Northwest Territories, 1981-82. Can. Data Rep. Fish. Aquat. Sci. 391: v + 24 p.
- CARDER, G.W., and R.F. PEET 1983 Data from the commercial fishery for Arctic char, Salvelinus alpinus (Linnaeus), in the District of Keewatin, Northwest Territories, 1973-81. Can. Data Rep. Fish. Aquat. Sci. 357: viii + 65 p.
- CASTONGUAY, M., and G.J. FITZGERALD 1982 Critiques de la methode de distinction entre poissons anadromes et dulcicoles de la meme espece par la teneur en strontium de leur ecailles. (Examination of the method of discriminating between anadromous and freshwater fish of the same species by the content of strontium of the scales.) Can. J. Fish. Aquat. Sci. 39(10): 1423-1425.
- CHERESHNEV, I.A. 1982 K voprosy o taksonomi cheskem statuse simpatricheskikh prokhodnykh gol'tsov roda Salvelinus (Salmonidae) vostochnoi Chukotki. (The taxonomic status of sympatric diadromous chars of the genus Salvelinus (Salmonidae) from eastern Chukotka.) Vopr. Ikhtiol. 22(6): 922-936. (J. Ichthyol. 22(6): 22-38)
- CONNELLY, J.J., and T.K. McCARTHY 1984 The metazoan parasites of freshwater fishes in the Corrib Catchment Area, Ireland. J. Fish Biol. 24(4): 363-375.
- CORKUM, L.D., and P.J. MCCART 1981 A review of the fisheries of the Mackenzie Delta and nearshore Beaufort Sea. Can. Manuscr. Rep. Fish. Aquat. Sci. 1613: v + 55 p.
- COWX, I.G. 1982 Concentrations of heavy metals in the tissues of trout, Salmo trutta, and char, Salvelinus alpinus, from two lakes in North Wales. Environ. Pollut. Ser. A Ecol. Biol. 29(2): 101-110.
- CRAIG, J.F., and J.M. FLETCHER 1982 The variability in the catches of charr, Salvelinus alpinus L., and perch, Perca fluviatilis L., from multi-mesh gill nets. J. Fish Biol. 20(5): 517-526.
- CRAIG, P.C. 1984 Fish use of coastal waters of the Alaskan Beaufort Sea: a review. Trans. Am. Fish. Soc. 113(3): 265-282.
- CRAIG, P.C., and L. HALDORSON 1981 Beaufort Sea barrier island-1 agooon ecological process studies: final report, Simpson Lagoon. Part 4-fish, p. 384-655. In Environmental assessment of the Alaskan continental shelf. Final reports of principal investigators. Vol. 7, biological studies. NOAA/OMPA, Boulder, CO.
- DANNEVIG, B.H., and T. BERG 1978a Temperature adaptation of lysosomal enzymes in fishes. Comp. Biochem. Physiol. B. Comp. Biochem. 61(1): 115-118.
- DANNEVIG, B.H., and T. BERG 1978b Uptake and proteolysis of denatured human serum albumin by kidneys in chars (Salmo alpinus L.). Comp. Biochem. Physiol. A. Comp. Physiol. 59(3): 299-303.
- DANNEVIG, B.H., and K.R. NORUM 1979 Esterification of cholesterol in fish plasma: studies on the cholesterol esterifying enzyme in plasma of char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 63(4): 537-541.
- DANNEVIG, B.H., and K.R. NORUM 1982 Cholesterol esterification and lipids in blood plasma of the char (Salmo alpinus L.) during sexual maturation. Comp. Biochem. Physiol. B. Comp. Biochem. 73(4): 771-777.
- DANNEVIG, B.H., and K.R. NORUM 1983 Effects of fasting on plasma lipids and cholesterol esterification and 1 i pids in plasma, liver and intestinal mucosa in the char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 74(2): 243-250.
- DANNEVIG, B.G., H. TOLLESHAUG, and T. BERG 1981 Evidence for *in vivo* hepatic uptake of a galactose terminated glycoprotein in fish Salmo alpinus. Biochim. Biophys. Acta 454: 505.
- DEMPSON, J.B., and R.K. MISRA 1984 Identification of anadromous Arctic charr Salvelinus alpinus stocks in coastal areas of northern Labrador based on a multivariate statistical analysis of meristic data. Can. J. Zool. 62(4): 631-636.
- DICK, T.A., and M. BELOSEVIC 1981 Parasites of arctic charr, Salvelinus alpinus (Linnaeus), and their use in separating sea-run and non-migrating charr. J. Fish Biol. 18: 339-347.
- DOVING, K.B., and R. BELGHAUG 1977 Frequency of induced waves in the OI factory bulb in char (Salmo alpinus L.); a temperature dependence. Comp. Biochem. Physiol. A. Comp. Physiol. 56(4): 577-579.
- DOVING, K.B., P.S. ENGER, and H. NORDENG 1973a Electrophysiological studies on the OI factory sense in char (Salmo alpinus L.). Comp. Biochem. Physiol. A. Comp. Physiol. 45(1): 21-24.
- DOVING, K.B., H. NORDENG, and B. OAKLEY 1974 Single unit discrimination of fish odors released by char (Salmo alpinus L.) populations. Comp. Biochem. Physiol. A. Comp. Physiol. 47(3): 1051-1063.
- DOVING, K.B., H. NOROENG, B. OAKLEY, and H. RUSSWURM 1973b Skin mucus basis for odor discrimination in migrating char, Salmo alpinus. Acta Physiol. Scand. Suppl. 396: 50.

- DOVING, K.B., and R. SELSET 1976 Chemical characterization of potent odorants from the skin mucus of the char, *Salmo alpinus*. *Acta Physiol. Scand. Suppl.* 79.
- DOVING, K.B., R. SELSET, and G. THOMMESEN 1980 Olfactory sensitivity to bile acids in salmonid fishes. *Acta Physiol. Scand.* 108(2): 123-132.
- DUMONT, P. 1982 Dispersion post-glaciaire de l'omble chevalier d'eau douce (*Salvelinus alpinus*) dans le Quebec Meridional. (Postglacial dispersion of the freshwater Arctic char (*Salvelinus alpinus*) in southern Quebec. *Nat. Can. (Que.)* 109(2): 229-234. (Can. Transl. Fish. Aquat. Sci. 4961, 1983)
- DUNBAR, M.J. 1970 On the fishery potential of the sea waters of the Canadian north. *Arctic* 23(3): 150-174.
- DUTIL, J.D. 1983 Periodic changes in the condition of the Arctic charr (*Salvelinus alpinus*) of the Nauyuk Lake system. Ph.D. thesis, University of Manitoba, Winnipeg, MB. vi + 149 p. (Diss. Abstr. Int. 44B(1): 74)
- ELLIOTT, C.L., and S. PECK 1980 Dipper, *Cinclus mexicanus*, swallowed by trout, *Salvelinus malma*. *Wilson Bull.* 94(4): 524.
- ELLIS, V., and B. BOWLER 1981 Lake and reservoir investigations - Penal Oreille Lake fisheries investigations. Penal Oreille Lake creel census. Idaho Dep. Fish Game Job Perform. Rep. 60 p.
- EVEREST, F.H., and W.R. MEEHAN 1981 Forest management and anadromous fish habitat productivity. *Trans. N. Am. Wildl. Nat. Resour. Conf.* 46: 521-530.
- FERGUSON, A. 1981 Systematic of Irish charr *Salvelinus alpinus* as indicated by electrophoretic analysis of tissue proteins. *Biochem. Syst. Ecol.* 9(2-3): 225-232.
- FILIPSSON, O. 1983 Väetterns fiskebestånd belysta genom provfisken med bottenaet. (The fish stocks of Lake Väettern as seen from bottom-set gillnets.) *Inf. Soetvattenslab. Drottningholm* 1: 61 p.
- FRALEY, J., D. READ, and P. GRAHAM 1981 Flathead River fishery study. Montana Department of Fish, Wildlife and Parks, Helena, MT. 212 p.
- FRYER, G. 1981 The copepod *Salmincola edwardsii* as a parasite of *Salvelinus alpinus* in Britain, and a consideration of the so-called relict fauna of Ennerdale Water. *J. Zool. (Lond.)* 193(2): 253-268.
- FURUKAWA, T. 1981 Feeding habit of stream resident iwana, *Salvelinus leucomaenis* (Pallas), with relation to spatial and temporal distribution of food organisms. *Int. Ver. theor. angew. Limnol. Verh.* 21(3): 1297.
- GILLMAN, D.V., and A.H. KRISTOFFERSON 1984 Biological data on Arctic charr, *Salvelinus alpinus* (L.) from the Coppermine River, Northwest Territories, 1981-82. *Can. Data Rep. Fish. Aquat. Sci.* 440: iv + 16 p.
- GLOVA, G.J., and P.J. McCART 1978 Studies of Arctic char populations in Nachvak Fiord, Labrador. Arctic Petroleum Operators Association (APOA) 146-7: 116 p.
- GLUBOKOVSKII, M.K. 1980 Nekotorye voprosy populjatsionnoj struktury u gol'tsov *Salvelinus*, Salmoniformes. (Some problems of the population structure of chars (*Salvelinus*, Salmoniformes)), p. 58-64. In S.M. Konovalov (ed.) *Populyatsionnaya biologiya i sistematika lososevykh*. (Population biology and taxonomy of Salmonidae.) Vladivostok (USSR) dvnts an S.S.S.R. 18.
- GLUBOKOVSKII, M.K., and I.A. CHERESHNEV 1981 Spornye voprosy filogenii gol'tsov roda *Salvelinus* golarktiki. I. Izuchenie prokhodnykh gol'tsov iz basseina vostochnosibirskego morya. (Unresolved problems concerning the phylogeny of chars (*Salvelinus*) of the holarctic: 1. Migratory chars of the east-Siberian Sea basin.) *Vopr. Ikhtiol.* 21(5): 771-786. (J. Ichthyol. 21(5): 1-15)
- GNAIGER, E., R. LACKNER, M. ORTMAYER, V. PUTZER, and R. KAUFMANN 1981 Physiological and biochemical parameters in anoxic and aerobic energy metabolism of embryonic salmonids *Salvelinus alpinus*. *Pfluegers Eur. J. Physiol.* 391(Suppl. 1): R57.
- GRUBER, K., and W. WIESER 1983 Energetic development of the alpine charr, *Salvelinus alpinus* in relation to temperature and oxygen. *J. Comp. Physiol. B. Biochem. Syst. Environ. Physiol.* 149(4): 485-493.
- GUSTAFSON, K.J. N.-A. NILSSON, and E. OLDFORS 1981 Øvre saervsjoen, konsekvenser av rotenonbehandling av en stor norrländsk sjö. (Consequences of the rotenone treatment of a large northern Swedish lake.) *Inf. Soetvattenslab. Drottningholm* 20 p.
- HALVORSEN, O. 1970 Morphological studies of *Diphyliobothriurn plerocercoids*. *Nytt Mag. Zool.* (Oslo) 18(1): 98.
- HALVORSEN, O., and K. ANDERSEN 1984 The ecological interaction between arctic charr, *Salvelinus alpinus* (L.), and the plerocercoid stage of *Diphyliobothriurn ditremum*. *J. Fish Biol.* 25(3): 305-316.
- HAMMAR, J. 1983 Effects of introduced *Mysis relicta* on populations of Arctic char, *Salvelinus alpinus*, complex in Sweden. *Pac. Sci. Congr. Proc.* 15(1-2): 93.
- HAMMAR, J., O. LINDH, U. BOSTROEM, M. FUERST, and P. E. LINGDELL 1983 Relativerna roediing, maa-s och dykandsbi om kemask (*Diphyliobothriurn* spp.) sainst foeraend-

- ringar i angreppssgrad efter introduktioner av nya fiskskärmingsdjur. (The Arctic char and Diphyllobothrium spp. control of infection by means of the introduction of Mysis relicta as a new and alternative fish food organism.) Inf. Soetvattens-lab. Drottningholm 4: 72 p.
- HANZEL, D.A. 1980 Flathead Lake fisheries investigation. Seasonal, area and depth distribution of cutthroat trout and dolly varden in Flathead Lake. Mont. Dep. Fish. Wildl. Parks Job Prog. Rep. MDFWP-PROJ-F-33-R-13(IA). 3p.
- HEGGBERGET, T.G., and B.O. JOHNSEN 1982 Infestations by Gyrodactylus sp. of Atlantic salmon, Salmo salar L., in Norwegian rivers. J. Fish Biol. 21(1): 15-26.
- HENDERSON, M.A. 1983 An analysis of prey detection in cutthroat trout (Salmo clarki clarki) and Dolly Varden charr (Salvelinus malma). Ph.D. thesis, University of British Columbia, Vancouver, B.C. (Diss. Abstr. Int. 43B(12): 3878) "
- HINDAR, K. and B. JONSSON 1982 Habitat and food-segregation of dwarf and normal Arctic charr (Salvelinus alpinus) from Vangsvatnet Lake, western Norway. Can. J. Fish. Aquat. Sci. 39(7): 1030-1045.
- HONSING-ERLENBURG, W. 1982 Die Identifikation von Salmoniden mittels biochemischer Merkmale (am Beispiel der LDH bei Saiblingen. (Taxonomic identification of salmonids with biochemical parameters.) Oesterr. Fisch. 35(1): 14-17.
- HUNTER, J.G. 1968 Fishes and fisheries, p. 360-378. In C.S. Beals (ed.) Science, history and Hudson Bay. V. 1. Department of Supply and Services, Ottawa.
- HUNTER, J.G., S.T. LEACH, D.E. McALLISTER, and M.B. STEIGERWALD 1984 A distributional atlas of records of the marine fishes of Arctic Canada in the National Museums of Canada and Arctic Biological Station. Sylogeus 52: 35 p.
- IVANKOV, V.N., and N.I. SERGIENKO 1984 Vnutrennie stroenie yai tsekletok lososevykh i sigovykh i taksonomicheskii status etikh grupp ryb. (The internal structure of eggs in the Salmonidae and Coregonidae and taxonomic status of these groups of fish.) Zool. Zh. 63(2): 222-227.
- IVANKOV, V.N., and T.V. SHKAFINA 1981 Morphology and cytochemistry of oogenesis in Salmonidae and Osmeridae. Sov. J. Mar. Biol. 7(1): 38-45.
- JAGOE, C.H., and T.A. HAINES 1982 Changes in surface morphology of sunapee charr (Salvelinus alpinus) gills exposed to acute acid stress, p.354. In R.E. Johnson (ed.) Acid rain/fisheries. Proceedings of an international symposium on acidic rain and fishery impacts on northeastern North America. American Fisheries Society, Bethesda, MD.
- JAGOE, C.H., and T.A. HAINES 1983 Alterations in gill epithelial morphology of yearling sunapee trout, Salvelinus alpinus aquassa, exposed to acute acid stress. Trans. Am. Fish. Soc. 112(5): 689-695.
- JAGOE, C.H., T.A. HAINES, and F.W. KIRCHEIS 1984 Effects of reduced pH on three life stages of Sunapee char Salvelinus dipinatus. Bull. Environ. Contain. Toxicol. 33(4): 430-438.
- JENSEN, J.W. 1981 Anadromous Arctic char, Salvelinus alpinus, penetrating southward on the Norwegian coast. Can. J. Fish. Aquat. Sci. 38(2): 247-249.
- JENSEN, J.W. 1982 A check on the invertebrates of a Norwegian hydroelectric reservoir and their bearing upon fish production. Inst. Freshw. Res. Drottningholm Rep. 60: 39-50.
- JOBLING, M. 1983a Effect of feeding frequency on food intake and growth of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 23(2): 177-185.
- JOBLING, M. 1983b Influence of body weight and temperature on growth rates of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(4): 471-475.
- JOBLING, M., and A. WANDSVIK 1983a Effect of social interactions on growth rates and conversion efficiency of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(5): 577-584.
- JOBLING, M., and A. WANDSVIK 1983b Quantitative protein requirements of Arctic charr, Salvelinus alpinus L. J. Fish Biol. 22(6): 605-612.
- JOBLING, M., and A. WANDSVIK 1983c An investigation of factors controlling food intake in Arctic charr, Salvelinus alpinus L. J. Fish Biol. 23(4): 397-404.
- JOHNSON, L. 1983 Homeostatic characteristics of single species fish stocks in Arctic lakes. Can. J. Fish. Aquat. Sci. 40(7): 987-1024.
- JONASSON, P. M., H. ADALSTEINSSON, C. HUNDING, C. LINDEGAARD, and J. OLAFSSON 1977 Limnology of Iceland. Folia Limnol. Scand. 17: 111-123.
- JONES, K. A., and T.J. HARA 1982 Behavioral response by Arctic charr (Salvelinus alpinus) to taurocholic acid and L-serine, two putative semiochemicals [Abstract #427]. Am. Zool. 22(4): 925.
- JONSSON, B., and K. HINDAR 1982 Reproductive strategy of dwarf and normal Arctic charr (Salvelinus alpinus) from Vangsvatnet Lake, western Norway. Can. J. Fish. Aquat. Sci. 39(10): 1404-1413.
- JONSSON, B., K. HINDAR, and T.G. NORTHCOTE 1984 Optimal age at sexual maturity of sympa-

- tric and experimentally allopatric cut-throat trout and Dolly Varden charr. *Oecologia* 61(3): 319-325.
- JUNGWIRTH, M., and H. WINKLER 1983 The temperature dependence of embryonic development of grayling (*Thymallus thymallus*), Danube salmon (*Huchen huchen*), Arctic char (*Salvelinus alpinus*) and brown trout (*Salmo trutta fario*). *Aquaculture* 38(4): 315-327.
- KAGAWA, H., K. TAKANO, and Y. NAGAHAMA 1981 Correlation of plasma estradiol 17-beta and progesterone levels with ultrastructure and histochemistry of ovarian follicles in the white-spotted char *Salvelinus leucomaenis*. *Cell Tissue Res.* 213(2): 315-330.
- KARTAVTSEV, Yu.F., M.K. GLUBOKOVSKII, and I.A. CHERESHNEV 1983 (Genetic differentiation and the level of variability of two sympatric char species *Salvelinus* (Salmonidae from Chukot national okrug USSR.) *Genetika* 19(4): 584-593. [In Russian]
- KAUKORANTA, M., B.M. MEDNIKOV, V.A. MAKSIMOV, and K. SAVVAITOVA 1982 Geneticheskaya divergentsiya gol'tsov roda *Salvelinus* (Salmonidae, Salmoniformes) (po dannym molekulyarnoi gibridizatsii DNK x DNK). A. [Genetic divergence of chars of the genus *Salvelinus* (Salmonidae, Salmoniformes) (from data of molecular DNA x DNA hybridization.)] *Zool. Zh.* 61(9): 1372-1379. [In Russian; English abstract]
- KHOREVIN, L.D., V.A. RUDNEV, and A.P. SHERSHNEV 1931 Vyedanie khishchnymi rybami molodi gorbuski *Oncorhynchus gorbuscha* (Walbaum) v period skata iz nebol'shoi nerestovoi reki o. Sakhalin. (Predation on juvenile pink salmon by predatory fishes during the period of their seaward migration on Sakhalin Island.) *Vopr. Ikhtiol.* 21(6): 1016-1022. (J. *Ichthyol.* 21(6): 47-53)
- KIOT, K., and M. OGURI 1984 Histological observations on the heart ventricles in 18 species of teleosts. *Bull. Jpn. Soc. Sci. Fish.* 50(2): 257-262.
- KIPLING, C. 1984 Some observations on autumn-spawning charr, *Salvelinus alpinus* L., in Windermere, 1939-82. *J. Fish Biol.* 24(2): 229-234.
- KIPLING, C., and LE CREN, E.D. 1984 Mark-recapture experiments on fish in Windermere, 1943-82. *J. Fish Biol.* 24(4): 395-414.
- KOMIYAMA, E., N. OHTAISHI, and K. MAEKAWA 1932 Occurrence of a sea-run type of the Dolly Varden in the Shiretoko Peninsula, Hokkaido. *Jpn. J. Ichthyol.* 29(3): 298-302.
- KORNFIELD, I., K.F. BELAND, J.R. MORING, and F.W. KIRCHEIS 1981 Genetic similarity among endemic Arctic char (*Salvelinus alpinus*) and implications for their management. *Can. J. Fish. Aquat. Sci.* 38(1): 32-39.
- KOSYUK, G.N., and S.N. BORKHSENIUS 1981 Intrapopulation differences in the structures of the genomes in two species of salmon-like fishes. *Mol. Biol. (Mosc.)* 15(3): 547-553. (*Mol. Biol. (Engl. Transl. Mol. Biol. (Mosc.))* 15(3 part 1): 422-427)
- KOTHBAUER, H., and H. SCHENKEL-BRUNNER 1931 Immunological investigations on fish eggs and toad, *Bufo bufo*, spawn appearance of glycosidases during the hatching process. *Zool. Anz.* 206(5-6): 354-360. [In German]
- KRISTJANSSON, J. 1978 Growth rates of brown trout and Arctic char in Iceland. *J. Agric. Res. Icel.* 10(2): 125-134.
- KRISTOFFERSON, A.H., and G.W. CARDER 1980 Data from the commercial fishery for Arctic char, *Salvelinus alpinus* (Linnaeus), in the Cambridge Bay area, Northwest Territories. *Can. Data Rep. Fish. Aquat. Sci.* 134: v+25 p.
- KRISTOFFERSON, A.H., D.R. LEROUX, and J.R. ORR 1982 A biological assessment of Arctic char, *Salvelinus alpinus* (L.), stocks in the Gjoa Haven-Pelly Bay area of the Northwest Territories, 1979-80. *Can. Manuscr. Rep. Fish. Aquat. Sci.* 1591: vi + 51 p.
- KRISTOFFERSON, A.H., and D.K. McGOWAN 1981 Data on Arctic charr, *Salvelinus alpinus* (Linnaeus), collected from test fisheries in the Baffin Region, Northwest Territories, 1975-79. *Can. Data Rep. Aquat. Sci.* 255: vi + 43 p.
- KRISTOFFERSON, A.H., and R.D. SOPUCK 1983 The effects of exploitation on the Arctic charr population of the Sylvia Grinnell River, Northwest Territories. *Can. Manuscr. Rep. Fish. Aquat. Sci.* 1721: v + 35 p.
- LANGELAND, A. 1978 Effect of fish (*Salvelinus alpinus*, Arctic char) predation on the zooplankton in ten Norwegian lakes. *Int. Ver. theor. angew. Limnol. Verh.* 20(3): 2065-2069.
- LANGELAND, A. 1981 Decreased zooplankton density in two Norwegian lakes caused by predation of recently introduced *Mysis relicta*. *Int. Ver. theor. angew. Limnol. Verh.* 21(2): 926-937.
- LAURENT, P.J. 1982 Resultats de deversements dans le Leman d'ombles marques. (Results obtained after release of tagged chars in Lake Geneva.) *Bull. Fr. Piscic.* 285: 210-220.
- LEARY, R.F., F.W. ALLENORF, and K.L. KNUDSEN 1983 Consistently high meristic counts in natural hybrids between brook trout, *Salvelinus fontinalis* and bull trout, *Salvelinus confluentus*. *Syst. Zool.* 32(4): 369-376.
- LEATHE, S.A., and P.J. GRAHAM 1981 Flathead Lake fish food habits study. Montana

Department of Fish, Wildlife and Parks,  
Helena, MT. 105 p.

LEOREW, L.J., and J.B. OEMPSION 1982 Summary of catch statistics from the northern Labrador commercial Arctic charr (Salvelinus alpinus) fishery. Can. Data Rep. Fish. Aquat. Sci. 353: iv + 52 p.

LEGENDRE, V. 1980 Les salmonidae au Quebec: un sommaire de la famine. Ministere du Loisir, de la Chasse et de la Peche, Quebec. 4 p.

LOENNING, S. 1981 Comparative electron microscope studies of the chorion of the fish egg. Rapp. P.-V. Reun. Cons. Int. Explor. Mer. 178: 560-564.

MCALLISTER, O.E., and D. ST-ONGE 1981 Post-glacial fossil fishes from Coppermine River, Northwest Territories, Canada. Can. Field-Nat. 95(2): 203-205.

MAEKAWA, K. 1978 Growth and development of Salvelinus malma miyabei compared with other forms of S. malma. Jpn. J. Ichthyol. 25(1): 9-18.

MAEKAWA, K. 1983 Streaking behaviour of mature male parrs of the Miyabe charr, Salvelinus malma miyabei, during spawning. Jpn. J. Ichthyol. 30(3): 227-234.

MAKSIMOVICH, A.A. 1981 Activity of some enzymes of carbohydrate metabolism in humpback salmon Oncorhynchus gorbuscha tissues during spawning starvation. Biol. Morya (Vladivost.) 6: 48-55. [In Russian]

MALMBERG, G. 1973 Gyrodactylus infestations on species of Salmo in Danish and Swedish hatcheries. Norw. J. Zool. 21(4): 325-326.

MARGOLIS, L., T.E. McDONALD, and G.E. HOSKINS 1981 Absence of the protozoan, Myxosoma cerebralis (Myxozoa: Myxosporea), the cause of whirling disease, in a survey of salmonids from British Columbia. Can. J. Fish. Aquat. Sci. 38(8): 996-998.

MARRER, H. 1980 Die Fischereilichen verhaeltnisse in den Oberengadinerseen, [Fishable stocks in the lakes of Oberengadin (Switzerland).] p. 1-21. In Fischereiliche Bewirtschaftung von Gewässern im Gebirge (Stock management in mountain waters.) Veroeff. Bundesamt. Umweltschutz. Eidgenoess. Fischerei Inspekt. 39.

MARSHALL, K.E. 1981 A bibliography of the Arctic charr, Salvelinus alpinus (L.) complex to 1980. Can. Tech. Rep. Fish Aquat. Sci. 1004: iv + 68 p.

MARUYAMA, T. 1981 Comparative ecology on the fluvial forms of Salmo (Oncorhynchus) masou masou (Brevoort) and Salvelinus leucomaenoides (Pallas) (Pisces, Salmonidae). 1. Structure of spawning redds and spawning sites in Kamidani, River Yura.

Jpn. J. Ecol. 31(3): 269-284. [In Japanese; English summary]

MATSUNO, T., T. MAOKA, and S. SAKAGUCHI 1980 Occurrence of beta caroten-2-ol from fishes. Bull. Jpn. Soc. Sci. Fish. 46(12): 1527-1531. [In Japanese; English abstract]

MEDNIKOV, B.M., V.A. MAKSIMOV, and K.A. SAVVATOVA 1980 Genetic divergence of eurasian chars, 357-364. In E.K. Balon (ed.) Charrs: salmonid fishes of the genus Salvelinus. W. Junk, The Hague.

MITROFANOV, Yu.A. 1983 Peculiarities of intra-specific chromosome variability in teleosts. Zh. Obshch. Biol. 44(5): 679-693. [In Russian]

MIYAUCHI, M., and M. TAKAGI 1981 Conversion of chlorinated nitro biphenyl ethers and their derivatives to mutagens by white-spotted char, Salvelinus leucomaenoides, liver homogenate. Bull. Jpn. Soc. Fish. 47(2): 243-250.

MOLES, A. 1982 Parasite-host records of Alaskan fishes. U.S. Natl Mar. Fish. Serv. Spec. Sci. Rep. Fish. 760: iii + 41 p.

MONOD, G. 1983 Etude de la contamination chimique du lac Leman par les residus organochlores: polychlorobiphenyles et DDT. Essai devaluation des risques pour la reproduction de l'omble chevalier (Salvelinus alpinus). (Study of organochlorinated residues: PCB and DOT. Risk estimation for the reproduction of Arctic charr (Salvelinus alpinus)). Ecole Nationale Veterinaire, Lyon, France. 165 p.

MONOD, G., and G. KECK 1982 PCBs in Lake Geneva (Lake Leman) fish. Bull. Environ. Contam. Toxicol. 29(5): 570-576.

MORAVEC, F., L. MARGOLIS, and N.P. BOYCE 1981 Some nematodes of the genus Rhabdochona (Spirurida) from fishes of Japan. Vestn. Cesk. Spol. Zool. 45(4): 277-290.

MORTON, W.M. 1982 Comparative catches and food habits of Dolly Varden and Arctic charrs, Salvelinus malma and S. alpinus, at Karluk, Alaska, in 1939-41. Environ. Biol. Fishes 7(1): 7-28.

MOSHENKO, R.W. 1981 A preliminary assessment of the Arctic charr sport fishery on the Robertson River (Koluktoo Bay), Northwest Territories, 1979. Can. Data Rep. Fish. Aquat. Sci. 306: iv + 9 p.

NAGAHAMA, Y., H. KAGAWA, and G. YOUNG 1982 Cellular sources of sex steroids in teleost gonads. Can. J. Fish. Aquat. Sci. 39(1): 56-64.

NAGASAWA, K., and S. EGUSA 1981 Echinorhynchus cotti (Acanthocephala: Echinorhynchidae) in fish of the Kanita River, Japan

- with a note on the life cycle. *Jpn. J. Parasitol.* 30(1): 45-50.
- NAKAMURA, M. 1982 Gonadal sex differentiation in white-spotted char, *Salvelinus leucomae-nis*. *Jpn. J. Ichthyol.* 28(4): 431-436.
- NESTEROV, V.D., and K.A. SAVVAITOVA 1981 Taxonomic position of migratory chars the genus *Salvelinus* (Salmonidae Salmoniformes) from Chesa Bay of the Barents Sea, USSR. *Vestn. Mosk. Univ. Ser. 16 Biol.* 1: 20-24. (*Mosc. Univ. Biol. Sci. Bull.* 36(1): 21-25)
- NOMURA, S., and H. SAITO 1982 Production of the extracellular hemolytic toxin by an isolated strain of *Aeromonas salmonicida*. *Bull. Jpn. Soc. Fish.* 48(11): 1589-1597.
- NOROENG, H. 1983 Solution to the char problem based on Arctic char (*Salvelinus alpinus*) in Norway. *Can. J. Fish. Aquat. Sci.* 40(9): 1372-1387.
- NORTHCOTE, T.G., C.J. WALTERS, and J.M.B. HUME 1977 Initial impacts of experimental fish introductions on the macrozooplankton of small oligotrophic lakes. *Int. Ver. theor. angew. Limnol. Verh.* 20(3): 2003-2012.
- NUNOMURA, W., A. HARA, K. TAKANO, and H. HIRAI 1983 Immunohistochemical localization of vitellogenin in hepatic cells of some salmonid fishes. *Bull. Fac. Fish. Hokkaido Univ.* 34(2): 79-87. [In Japanese; English abstract]
- NYMAN, L., J. HAMMAR, and R. GYDEMO 1981 The systematic and biology of landlocked populations of Arctic char from northern Europe. *Inst. Freshw. Res. Drottningholm Rep.* 59: 128-141.
- ONOZATO, H., and E. YAMAHA 1983 Induction of gynogenesis with ultraviolet rays in four species of Salmoniformes. *Bull. Jpn. Soc. Sci. Fish.* 49(5): 693-699. [In Japanese; English abstract]
- PAPST, M.H., and G.E. HOPKY 1983a Growth of Arctic charr (*Salvelinus alpinus* L.) in a pilot commercial rearing system. *Can. Tech. Rep. Fish. Aquat. Sci.* 1182: iv + 16 p.
- PAPST, M.H., and G.E. HOPKY 1983b Development of an Arctic charr (*Salvelinus alpinus*) broodstock [Abstract]. In *Salmonid reproduction: an international symposium, Bellevue, Washington, 31 Oct. - 2 Nov. 1983*.
- PAPST, M.H., and G.E. HOPKY 1984 Development of an Arctic charr (*Salvelinus alpinus* L.) broodstock. *Aquaculture* 43: in press.
- PECHNIKOV, A.S. 1980 Biologicheskoe obosnovanie i perspektivi ispol'zovaniya ozernoi formy gol'tsa *Salvelinus alpinus* (L.) spe-cies complex v ozernykh khozyaistvakh SSSR, [Biological basis and a view of the utilization of lake forms of the char, *Salvelinus alpinus*, species complex in the economy of the Lakes of the USSR,] p. 50-53. In *Voprosy akklimatsii ryb i kor-movykh bespozvonochnykh*. [Problems on the acclimatization of fishes and their feeding on invertebrates.] Gos. Nauchno-Issled. Inst. Ozern. Rechn. Rybn. Khoz., Lenigrad. (Rybokhozyaistvennoe Izuchenie Vnutrennykh Vod, Sbornik 25)
- PEDROLI, J.C. 1983 Reintroduction de l'omble chevalier *Salvelinus alpinus* dans le lac de Neuchatel. [Reintroduction of *Salvelinus alpinus* in Lake Neuchatel (Switzerland).] *Bull. Fr. Piscic.* 290: 158-160.
- PERCY, R. 1975 Fishes of the outer Mackenzie Delta. Beaufort Sea Proj. Tech. Rep. 8: 114 p.
- PHILLIPS, R.B. 1983 Chromosomal location of nuclear organizer regions in salmonids. *Genetics* 104 (1 part 2): S56-S57.
- PICHUGIN, M.Yu. 1983 Osteologicheskaya kharakteristika yuzhnogo gol'tsa roda *Salvelinus* (Salmonidae) iz populyatsii rek Myi Bol'shaya Iska (Amurskiy Leman). (Osteological description of southern char of the genus *Salvelinus* (Salmonidae) from the My and 801' shaya River populations Amur Lagoon.) *Vopr. Ikhtiol.* 23(4): 557-568. (*J. Ichthyol.* 23(4): 27-38)
- POHLHAUSEN, H. 1983 Freiwasseraufzucht von seesai bli gen mi t Wi nterfutterung. (Charr ranching and feeding during winter.) *Fisch. Teichwirt.* 34(4): 102-104.
- RIGLER, F.H. 1978 Limnology in the high arctic: a case study of Char Lake. *Int. Ver. theor. angew. Limnol. Verh.* 20(1): 127-140.
- ROGERS, A. 1980 Rescuing Di norwi c's fish. *Water Power Dam Constr.* 32(10): 24-30.
- ROGERS, I. H., and H.W. MAHOOD 1982 Environmental monitoring of the Fraser River at Prince George. Chemical analysis of fish, sediment, municipal sewage and blached kraft wastewater samples. *Can. Tech. Rep. Fish. Aquat. Sci.* 1135: iv + 15 p.
- ROMBOUGH, P. J., S.E. BARBOUR, and J.J. KEREKES 1981 Freshwater fishes from northern Newfoundland. *Can. Field-Nat.* 95(3): 359-361.
- RUHLE, C. 1980 Fischereiliche bewirtschaftung von Speicherseen im Gebirge, (Stock management in mountain reservoirs,) p. z3-42. In *Fischereiliche Bewirtschaftung von Gewässern im Gebirge* (Stock management in mountain waters.) Veroeff. Bundesamt. Umwelt schutz Ei dgenoess. Fischerei-Inspekt. 39.
- RUKHLOV, F.N. 1980 O nerestuvushchei kundzhe sakhalina. [Spawning *Salvelinus leucomae-nis* from Sakhalin.] *Gidrobiol. Zh.* 16(1): 89.

- RUSSELL, L.R. 1975 An annotated bibliography on the ecology of aradromous cutthroat trout and Dolly Varden char. B.C. Minist. Environ. Fish. Tech. Circ. 17: 115 p.
- SALONIUS, P.O. 1973 Barriers to range extension of Atlantic and Pacific salmon in Arctic North America. Arctic 26(2): 112-122.
- SAVVAITOVA, K.A. 1983 Primenenie kontseptsii biologicheskogo violaka otsenke sistematicheskogo polozheniyakh gol'tsov roda Salvelinus (Salmonidae). (The application of biological species concept to an evaluation of the systematic position of chars of the genus Salvelinus (Salmonidae).) Vopr. Ikhtiol. 23(6): 883-893. (J. Ichthyol. 23(6): 1-12)
- SAVVAITOVA, K.A., and V.A. MAKSIMOV 1980 Formoobrazovanie u gol'tsov roda Salvelinus (Salmoniformes, Salmonidae) iz ozer dell'y Leny. (Form origination in chars of the genus Salvelinus (Salmoniformes, Salmonidae) from the Lena Delta Lakes.) Zool. Zh. 59(12): 1820-1830. [In Russian; English summary]
- SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.K. MEREZHIN 1980a Ecological forms in alpine char of the genus Salvelinus (Salmonidae, Salmoniformes) from mountain lakes of Transbaikalia Russian-Sfsr USSR. Biol. Nauki (Mosc.) 5: 20-32. [In Russian]
- SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.K. MEREZHIN 1981 Charrs, genus Salvelinus (Salmonidae, Salmoniformes) of Kuando Charsky mountain lakes from transbaikalian region USSR, p. 119-166. In L.I. Sokolov and A.I. Shatalkin (cd.) Ecological-faunistic research: biological resources of the territory in the zone of construction of the Baikal-Amur railway. State University, Moscow. [In Russian]
- SAVVAITOVA, K.A., V.A. MAKSIMOV, and V.D. NESTEROV 1980b K sistematike i ekologii gol'tsev roda Salvelinus (sem. Salmonidae) vodoemov poloostrova Taimyr. (The systematics and ecology of chars of the genus Salvelinus (Salmonidae) of the Taimyr Peninsula.) Vopr. Ikhtiol. 20(2): 195-210. (J. Ichthyol. 20(2): 1-15)
- SCRUTON, D.A. 1984 A survey of selected lakes in Labrador, with an assessment of lake status and sensitivity in relation to acid precipitation. Can. Tech. Rep. Fish. Aquat. Sci. 1296: v + 115 p.
- SELSET, R. 1980 Chemical methods for fractionation of odorants produced by char smelts and tentative suggestions for pheromone origins. Acta Physiol. Scand. 108(1): 97-104.
- SELSET, R., and K.B. DOVING 1980 Behavior of mature anadromous char, Salmo alpinus, toward odorants produced by smolts of their own population. Acta Physiol. Scand. 108(2): 113-122.
- SHAPOVALOV, L., A.J. CORDONE, and W.A. DILL 1981 A list of the freshwater and anadromous fishes of California. Calif. Fish Game 67(1): 4-38. (p. 12, confluentus in McCloud River).
- SKAFTASON, J.F., and T. JOHANNESSEN 1982 Organochlorine compounds in Icelandic lake trout and salmon, Salmo salar. fry: local and global sources of contamination. Acta Pharmacol. Toxicol. 51(4): 397-400.
- STABELL, O.B., and R. SELSET 1980 Comparison of mucus collecting methods in fish olfaction. Acta Physiol. Scand. 108: 91-96.
- STEIN, H. 1981 Light and electron optical studies of the spermatozoa of various teleost fish. Z. angew. Zool. 68(2): 183-198. [In German]
- STEINER, V. 1984 Die Kultivierung des Seesaiblings - Salvelinus alpinus L. - ein praxisnahes Forschungsprogramm am Institut fuer Fischforschung in Thaur/Tirol. (Culture of Arctic char - Salvelinus alpinus L. - a pilot programme at the Institute of Fish Investigation, Thaur/Tirol.) Oesterr. Fisch. 37(1): 15-23.
- STERLING, G. 1980 Migratory behavior of the major salmonid fishes, rainbow trout, Dolly Varden char and mountain whitefish in the Tri-Creek Watershed, 1969 to 1978. Alberta Energy Nat. Resour. Fish Wildl. Div. Rep. 6: vi + 64 p.
- SUNDNES, G., and O. SAND 1975 Studies of a physostome swimbladder by resonance frequency analyses. J. Cons. Cons. Int. Explor. Mer 36(2): 176-182.
- TA8ACHEK, J.L. 1984 Evaluation of grower diets for intensive culture of two strains of Arctic charr (Salvelinus alpinus L.). Can. Tech. Rep. Fish. Aquat. Sci. 1281: iv + 21 p.
- THOMAS, R.E., and S.D. RICE 1981 Excretion of aromatic hydrocarbons and their metabolites by freshwater and sea water Dolly Varden char Salvelinus malma, p. 425-448. In F.J. Vernberg, A. Calabrese, F.P. Thurberg and W.B. Vernberg (cd.) Biological monitoring of marine pollutants. Academic Press, New York, NY.
- THOMMESEN, G. 1982 Specificity and distribution of receptor cells in the olfactory mucosa of char, Salmo alpinus. Acta Physiol. Scand. 115(1): 47-56.
- THOMMESEN, G. 1983 Morphology, distribution and specificity of olfactory receptor cells in salmonid fishes. Acta Physiol. Scand. 117(2): 241-250.
- VASILENKO, N.A., Yu.V. MOVCHAN and A.A. PETROSENKO 1983 Study of the trophic links of malma, Salvelinus malma, of the Kuril Islands. Vestn. Zool. 4: 39-43. [In Russian]

- VASIL'EVA, E.D. 1981a Ozernyi golets Salvelinus alpinus L. iz bassejna reki Zarubikha (k voprosu o gol'tsi paliyakh Kol'skogo poluostrova. (The lake char, Salvelinus alpinus, L. from the Zarubikha River basin (a contribution to the systematic of chars from the Kola Peninsula).) Vopr. Ikhtiolog. 21(2): 232-247. " (J. Ichthyol. 21: 26-42)
- VASIL'EVA, E.D. 1981b Morfologiya cherepa prokhodnogo gol'tsa Salvelinus (Salmoniformes, Salmonidae) cheshskoj guby Barentseva Morya. (Skull morphology of anadromous char of the genus Salvelinus (Salmoniformes: Salmonidae) in Cheshskaya Bay (Barents Sea.) Vestn. Mosk. Univ. Ser. 16 Biol. 4: 15-19. (Mosc. Univ. Biol. Sci. Bull. (Engl. Transl. Vestn. Mosk. Univ. Biol.) 36(4): 15-18.)
- VOLOBUYEV, V.V., E.D. VASIL'EVA, and K.A. SAVVAI TOVA 1979 O sistematiceskem statuse chukotskih prokhodnykh gol'tsov roda Salvelinus. (The systematic status of the diadromous "Chukchi char" of the genus Salvelinus.) Vopr. Ikhtiol. 19(3): 408-414. Ichthyol. 19(3): 21-30
- WALLACE, J.C., and D. AASJORD 1984a The initial feeding of Arctic charr (Salvelinus alpinus) alevins at different temperatures and under different feeding regimes. Aquaculture 38(1): 19-33.
- WALLACE, J.C., and D. AASJORD 1984b An investigation of the consequences of egg size for the culture of Arctic charr, Salvelinus alpinus. J. Fish Biol. 42(4): 427-435.
- WANDSVIK, A., and M. JOBLING 1982a Observations on growth rates of Arctic charr, Salvelinus alpinus (L.), reared at low temperature. J. Fish Biol. 20(6): 689-699.
- WANDSVIK, A., and M. JOBLING 1982b Overwintering mortality of migratory Arctic charr, Salvelinus alpinus (L.), reared in salt water. J. Fish. Biol. 20(6): 701-706.
- WATANABE, T., M. SANO, Y. ISHIDA, Y. MIZUSAWA, and M. MICHIKAWA 1980 Establishment and properties of the continuous cell line derived from the embryonated egg of chum salmon, Oncorhynchus keta. Bull. Jpn. Soc. Sci. Fish. 46(10): 1203-1209.
- WENT, A.E.J. 1974 Where to try for an Irish char. Trout and Salmon 19(223): 37-38.
- WOLD, J.K., and R. SELSET 1977 Glycoproteins in the skin mucus of the char (Salmo alpinus L.). Comp. Biochem. Physiol. B. Comp. Biochem. 56(3): 215-218.
- WOLD, J.K., and R. SELSET 1978 Glycoproteins in the skin mucus of the char (Salmo alpinus L.)-II. Production of mucus after death of fish. Comp. Biochem. Physiol. B. Comp. Biochem. 61(2): 271-273.
- WOLF, E.G., B. MORSON, and K.W. FUCIK 1983 Preliminary studies of food habits of juvenile fish, China Poot Marsh and Potter Marsh, Alaska, 1978. Estuaries 6(2): 102-114.
- YU, P.A. 1982 Biochemical population genetics and speciation. Evolution 36(6): 1168-1181.
- ZALENSKII, A.O., P. BUKHKHOL'TS, and R.Kh. IBRA-GIMOV 1980 Comparative study of protamines of the Salmonidae (Pisces). Tsitologiya 22(6): 727-729. [In Russian]
- ZALENSKII, A.O., L.V. BRYKOVA, F.A. GOREL, V.A. BERDNIKOV, and I.A. ZALENSKAYA 1981 Comparison of the histones of various species of salmon and intraspecies. variability of histone H-1 of Oncorhynchus nerka. Biochemistry (Engl. Transl. Biokhimiya) 46(3 part 2): 397-401.
- ZELINSKII, Yu.P., A.V. POLINA, and I.M. MEDVE-OVA 1983 The karyotype and formation of adaptations in a freshwater lake char of the genus Salvelinus (Salmoniformes, Salmonidae) in Lake Ladoga, USSR. Zool. Zh. 62(5): 732-736.

## TAXONOMIC INDEX

## ALBUS

- Butorina, T.E. 1983  
Butorina, T.E. et al. 1980  
Glubokovskii, M.K. 1980

## ALPINUS

- Andersen, R. 1982  
Andersson, L. et al. 1983  
Bakke, T.A. 1982  
Barber, F.G. 1978  
Batterman, A.R., and P.M. Cook 1981  
Belghaug, R., and K.B. Doving 1977  
Black, G.A. 1982, 1983  
Black, G.A., and M.W. Lankester 1981  
Brannon, E.L. et al. 1984  
Butsuk, S.V., and B.I. Bessonov 1981  
Canada Department of Fisheries and Oceans 1984a, 1984b, 1984c  
Carder, G.W. 1981, 1983  
Carder, G.W., and R.F. Peet 1983  
Castonguay, M., and G.J. Fitzgerald 1982  
Chereshnev, I.A. 1982  
Connelly, J.J., and T.K. McCarthy 1984  
Corkum, L.D., and P.J. McCart 1981,  
Cowx, I.G. 1982  
Craig, J.F., and J.M. Fletcher 1982  
Craig, P.C. 1984  
Craig, P.C., and L. Haldorson 1981  
Dannevig, B.H. and T. Berg 1978a, 1978b  
Dannevig, B.H. and K.R. Norum 1979, 1982, 1983  
Dannevig, B.H. et al. 1981  
Oempson, J.B., and R.K. Misra 1984  
Dick, T.A., and M. Belosevic 1981  
Doving, K.B., and R. Belghaug 1977  
Doving, K.B., and R. Selset 1976  
Doving, K.H. et al. 1973a, 1973b, 1974, 1980

- Dumont, P. 1982  
 Dunbar, M.J. 1970  
 Dutil, J.D. 1983  
 Ferguson, A. 1981  
 Filipsson, O. 1983  
 Fryer, G. 1981  
 Gillman, D.V., and A.H. Kristoffersson 1984  
 Glova, G.J., and P.J. McCart 1978  
 Glubokovskii, M.K. 1980  
 Glubokovskii, M.K., and I.A. Cherezhnev 1981  
 Gnaiger, E. et al. 1981  
 Gruber, K., and W. Wieser 1983  
 Gustafson, K.J. et al. 1981  
 Halvorsen, O. 1970  
 Halvorsen, O., and K. Andersen 1984  
 Hammar, J. 1983  
 Hammar, J. et al. 1983  
 Heggberget, T.G., and B.O. Johnsen 1982  
 Hindar, K., and B. Jonsson 1982  
 Honsing-Erlenburg, W. 1982  
 Hunter, J.G. 1968  
 Hunter, J.G. et al. 1984  
 Jagoe, C.H., and T.A. Haines 1982, 1983  
 Jagoe, C.H. et al. 1984  
 Jensen, J.W. 1981, 1982  
 Jobling, M. 1983a, 1983b  
 Jobling, M., and A. Wandvik 1983a, 1983b, 1983c  
 Johnson, L. 1983  
 Jonasson, P.M. et al. 1977  
 Jones, K.A., and T.J. Hara 1982  
 Jonsson, S., and K. Hindar 1982  
 Jungwirth, M., and H. Winkler 1983  
 Kaukoranta, M. et al. 1982  
 Khorevin, L.D. et al. 1981  
 Kipling, C. 1984  
 Kipling, C., and E.D. Le Cren 1984  
 Kornfield, I. et al. 1981  
 Kothbauer, H., and H. Schenkel-Brunner 1981  
 Kristjansson, J. 1978  
 Kristoffersson, A.H., and G.W. Carder 1980  
 Kristoffersson, A.H., and D.K. McGowan 1981  
 Kristoffersson, A.H., and R.D. Sopuck 1983  
 Kristoffersson, A.H. et al. 1982  
 Langeland, A. 1978, 1981  
 Laurent, P.J. 1982  
 Ledrew, L.J., and J.B. Dempson 1982  
 Legendre, V. 1980  
 Loennig, S. 1981  
 McAllister, D.E., and D. St-Onge 1981  
 Malmborg, G. 1973  
 Marshall, K.E. 1981  
 Mednikov, B.M. et al. 1980  
 Molles, A. 1982  
 Monod, G. 1983  
 Monod, G., and G. Keck 1982  
 Morton, W.M. 1982  
 Moshenko, R.W. 1981  
 Nesterov, V.D., and K.A. Savvaitova 1981  
 Nordeng, H. 1983  
 Nyman, L. et al. 1981  
 Papst, M.H., and G.E. Hopky 1983a, 1983b, 1984  
 Pechnikov, A.S. 1980  
 Pedroli, J.C. 1983  
 Percy, R. 1975  
 Phillips, R.B. 1983  
 Pichugin, M.Yu. 1983  
 Pohlhausen, H. 1983  
 Rigler, F.H. 1978  
 Rogers, A. 1980  
 Rombough, P.J. et al. 1981  
 Ruhle, C. 1980  
 Saloni, P.O. 1973  
 Savvaitova, K.A., and V.A. Maksimov 1990
- Savvaitova, K.A. et al. 1980  
 Scruton, D.A. 1984  
 Selset, R. 1980  
 Selset, R., and K.B. Doving 1980  
 Skafason, J.F., and T. Johannesson 1982  
 Stabell, O.B., and R. Selset 1980  
 Stein, H. 1981  
 Steiner, V. 1984  
 Sundnes, G., and O. Sand 1975  
 Tabachek, J.L. 1984  
 Thommesen, G. 1982, 1983  
 Vasil'eva, E.I. 1981a  
 Volobuyev, V.V. et al. 1979  
 Wallace, J.C., and D. Aasjord 1984a, 1984b  
 Wandvik, A., and M. Jobling 1982a, 1982b  
 Went, A.E.J. 1974  
 Weld, J.K., and R. Selset 1977, 1978  
 Zelinskii, Yu.P. et al. 1983
- BOGANIDAE**
- Kaukoranta, M. et al. 1982  
 Mednikov, B.M. et al. 1980
- CONFLUENTUS**
- Leary, R.F. et al. 1983  
 Leathe, S.A., and P.J. Graham 1981  
 Shapovalov, L. et al. 1981
- DRJAGINI**
- Kaukoranta, M. et al. 1982  
 Mednikov, B.M. et al. 1980
- LEPECHINI**
- Zelinskii, Yu.P. et al. 1983
- LEUCOMAENIS**
- Altukhov, Yu.P. 1982  
 Butorina, T.E. et al. 1980  
 Furukawa, T. 1981  
 Ivankov, V.N., and T.V. Shkafina 1981  
 Kagawa, H. et al. 1981  
 Kaukoranta, M. et al. 1982  
 Khorevin, L.D. et al. 1981  
 Marshall, K.E. 1981  
 Maruyama, T. 1981  
 Matsuno, T. et al. 1980  
 Mednikov, B.M. et al. 1980  
 Miyachi, M., and M. Takagi 1981  
 Moravec, F. et al. 1981  
 Nagahama, Y. et al. 1982  
 Nagasawa, K., and S. Egusa 1981  
 Nakamura, M. 1982  
 Nomura, S., and H. Saito 1982  
 Nunomura, W. et al. 1983  
 Onozato, H., and E. Yamaha 1983  
 Rukhlov, F.N. 1980  
 Watanabe, T. et al. 1980
- MALMA**
- Balon, E.K. 1982  
 Butorina, T.E. 1983

## GEOGRAPHIC INDEX

- Butorina, T.E.** et al. 1980  
**Chereshnev, I.A.** 1982  
**Elliott, C.L.**, and **S. peck** 1980  
**Ellis V.**, and **B. Bowler** 1981  
**Everest, F.H.**, and **W.R. Meehan** 1981  
**Fraley, J.** et al. 1981  
**Glubokovskii, M.K.** 1980  
**Glubokovskii, M.K.**, and **I.A. Chereshnev** 1981  
**Hanzel, D.A.** 1980  
**Henderson, M.A.** 1983  
**Jonsson, B.** et al. 1984  
**Kartavtsev, Yu.F.** et al. 1983  
**Kaukoranta, M.** et al. 1982  
**Komiyama, E.** et al. 1982  
**Kosyuk, G.N.**, and **S.N. Borkhsenius** 1981  
**Maekawa, K.** 1978, 1983  
**Maksimovich, A.A.** 1981  
**Margolis, L.** et al. 1981  
**Marshall, K.E.** 1981  
**Matsuno, T.** et al. 1980  
**Mednikov, B.M.** et al. 1980  
**Moles, A.** 1982  
**Morton, W.M.** 1982  
**Northcote, T.G.** et al. 1977  
**Rogers, I.H.**, and **H.W. Mahood** 1982  
**Russell, L.R.** 1975  
**Salonius, P.O.** 1973  
**Shapovalov, L.** et al. 1981  
**Sterling, G.** 1980  
**Thomas, R.E.**, and **S.O. Rice** 1981  
**Vasilenko, N.A.** et al. 1983  
**Wolf, E.G.** et al. 1983  
**Zalenski, A.O.** et al. 1980, 1981
- MIYABEI**  
**Maekawa, K.** 1978, 1983
- NEIVA**  
**Butorina, T.E.** et al. 1980  
**Kaukoranta, M.** et al. 1982
- OQUASSA**  
**Jagoe, C.H.**, and **T.A. Haines** 1982, 1983
- PLUVIUS**  
**Kiot, K.**, and **M. Oguri** 1984
- SALVELINUS**  
**Amann, E.** 1980  
**Marrer, H.** 1980  
**Nyman, L.** et al. 1981
- STAGNALIS**  
**Nyman, L.** et al. 1981
- TARANETZI**  
**Chereshnev, I.A.** 1982  
**Glubokovskii, M. K.**, and **I.A. Chereshnev** 1981  
**Kartavtsev, Yu. F.** et al. 1983
- AUSTRIA**  
**Amann, E.** 1980  
**Steiner, V.** 1984
- CANADA**  
**Dunbar, M.J.** 1970  
**Hunter, J.G.** et al. 1984  
Alberta  
**Sterling, G.** 1980  
British Columbia  
**Jonsson, B.** et al. 1984  
Northcote, T.G. et al. 1977  
**Rogers, I.H.**, and **H.W. Mahood** 1982  
Great Bear Lake  
**Black, G.A.** 1983  
Great Lakes  
**Black, G.A.** 1983  
Hudson Bay  
**Barber, F.G.** 1978  
**Hunter, J.G.** 1968  
Labrador  
**Canada Department of Fisheries and Oceans** 1984c  
**Dempson, J.B.**, and **R.K. Misra** 1984  
**Glova, G.J.**, and **P.J. McCart** 1978  
**Ledrew, L.J.**, and **J.B. Dempson** 1982  
**Scruton, D.A.** 1984  
Newfoundland  
Rombough, P.J. et al. 1981
- **Northwest Territories**  
Carder, G.W. 1981, 1983  
Carder, G.W., and **R. F. Peet** 1983  
Corkum, L.D., and **P.J. McCart** 1981  
Dutil, J. O. 1983  
Giiliman, D. V., and **A.H. Kristofferson** 1984  
Johnson, L. 1983  
Kristofferson, A. H., and **G.W. Carder** 1980  
Kristofferson, A. H., and **D.K. McGowan** 1981  
Kristofferson, A.H., and **R.D. Sopuck** 1983  
Kristofferson, A.H. et al. 1982  
McAulister, D.E., and **O. St-Onge** 1981  
Moshenko, R.W. 1981  
Percy, R. 1975  
Rigler, F.H. 1978
- Quebec  
Dumont, P. 1982  
Legendre, V. 1980
- DENMARK**  
**Malmborg, G.** 1973
- ENGLAND**  
**Craig, J. F.**, and **J.M. Fletcher** 1982  
**Fryer, G.** 1981  
**Kipling, C.** 1984  
**Kipling, C.**, and **E.D. LeCren** 1984

- FRANCE (Some papers on Lake Geneva also under  
Switzerland and )
- Monod, G.** 1983
- ICELAND
- Jonasson, P.M.** et al. 1977  
**Kristjansson, J.** 1978  
**Nyman, L.** et al. 1981  
**Skaftason, J.F.**, and T. Johannesson 1982
- IRELAND
- Conneely, J.J.**, and T.K. McCarthy 1984  
Went, A.E.J. 1974
- JAPAN
- Furukawa, T.** 1981  
**Komiyama, E.** et al. 1982  
**Maruyama, T.** 1981  
**Moravec, F.** et al. 1981  
**Nagasawa, W.**, and S. Egusa 1981
- NORWAY
- Andersen, R.** 1982  
**Halvorsen, O.** 1970  
**Halvorsen, O.**, and K. Anderson 1984  
**Heggberget, T.G.**, and B.O. Johnsen 1982  
**Hindar, K.**, and B. Jonsson 1982  
**Jensen, J.W.** 1981, 1982  
**Jonsson, B.**, and K. Hindar 1982  
**Langeland, A.** 1978, 1981  
**Nordeng, H.** 1983  
**Nyman, L.** et al. 1981
- SWEDEN
- Filipsson, O.** 1983  
**Gustafson, K.J.** et al. 1981  
**Hammar, J.** 1983  
**Malmberg, G.** 1973  
**Nyman, L.** et al. 1981
- SWITZERLAND
- Laurent, P.J.** 1982  
**Marrer, H.** 1980  
**Monod, G.**, and G. Keck 1982  
**Pedroli, J.C.** 1983  
**Ruhle, C.** 1980
- UNITED STATES OF AMERICA
- Elliott, C.L.**, and S. Peck 1980
- Alaska  
**Craig, P.C.** 1984  
Craig, P.C., and L. Haldorson 1981  
**Morton, W.M.** 1982  
Wolf, E.G. et al. 1983
- Idaho  
**Ellis, V.**, and B. Bowler 1981
- Montana  
**Fraley, J.** et al. 1981  
**Hanzel, D.A.** 1980  
**Leary, R.F.** et al. 1983  
Leathe, S.A., and P.J. Graham 1981
- USSR
- Ivankov, V.N.**, and N.I. Sergienko 1984  
**Pechnikov, A.S.** 1980
- Azabache, Lake  
Bagiryan, S.Sh. 1981  
Butorina, T.E. 1983
- Chukotski Peninsula  
**Borisovets, E.F.** 1982  
**Chereshnev, I.A.** 1982  
**Kartavtsev, Yu.F.** et al. 1983  
Volobuyev, V.V. et al. 1979
- Kamchatka  
Bagiryan, S.Sh. 1981  
Butorina, T.E. 1980, 1983
- Kola Peninsula  
Vasil'eva, E.I. 1981a
- Kuril Islands  
**Vasilenko, N.A.** et al. 1983
- Sakhalin Island  
**Ivankov, V.N.**, and T.V. Shkafina 1981  
**Khorevin, L.D.** et al. 1981  
Rukhlov, F.N. 1980
- Siberia  
**Glubokovskii, M.K.** 1980  
Glubokovskii, M.K., and I.A. Chereshnev 1981  
Nesterov, V.D. and K.A. Savvaítova 1981  
Pichugin, M.Yu. 1983  
**Savvaítova, K.A.**, and V.A. Maksimov 1980  
Savvaítova, K.A. et al. 1980a, 1981  
Vasil'eva, E.D. 1981b
- Taimyr Peninsula  
**Savvaítova, K.A.** et al. 1980b
- WALES
- Cowx, I.G.** 1982  
Rogers, A. 1980
- SUBJECT INDEX
- ANATOMY AND MORPHOLOGY
- Chereshnev, I.A. 1982  
**Dempson, J.B.**, and R.K. Misra 1984  
**Glubokovskii, M.K.**, and I.A. Chereshnev 1981  
**Ivankov, V.N.**, and T.V. Shkafina 1981  
**Jagoe, C.H.**, and T.A. Haines 1982, 1983  
Kiot, K., and M. Oguri 1984  
**Leary, R.F.** et al. 1983  
Loenning, S. 1981  
Pichugin, M.Yu. 1983  
**Sundnes, G.**, and O. Sand 1975  
Vasil'eva, E.D. 1981a, 1981b

## AQUACULTURE

- Jungwirth, M.**, and H. **Winkler** 1983  
**Onozato, H.**, and E. **Yamaha** 1983  
 papst, M.H., and G.E. Hopky 1983a, 1983b, 1984  
**Pohlhausen, H.** 1983  
 Steiner, V. 1984  
 Tahachek, J.L. 1984  
**Wallace, J.C.**, and D. **Aasjord** 1984a, 1984b  
**Wandsvik, A.**, and M. **Jobling** 1982a, 1982b

## BEHAVIOR

- Jones, K.A.**, and T.J. **Hara** 1982  
**Maekawa, K.** 1983  
**Selset, R.** and K. E. **Doving** 1980

## BIOGRAPHIES

- Marshall, K.E.** 1981  
**Russell, L.R.** 1975

## BLOOD

- Dannevig, B.H.**, and K.R. **Norum** 1983  
**Kagawa, H.** et al. 1981  
 Nomura, S., and H. **Saito** 1982

## CYTOLOGICAL STUDIES

- Ivankov, V.N.**, and T.V. **Shkafina** 1981

## DEVELOPMENT

- Gnaiger, E. et al. 1981  
 Gruber, K., and W. **Wieser** 1983  
**Jagoe, C.H.** et al. 1984  
**Jungwirth, M.**, and H. **Winkler** 1983  
**Kothbauer, H.**, and H. **Schenkel-Brunner** 1981  
**Loenning, S.** 1981  
**Maekawa, K.** 1978

## DISTIBUTION

- Butorina, T.E.** et al. 1980  
**Craig, P.C.** 1984  
 Dumont, P. 1982  
 Fryer, G. 1981  
**Ivankov, V.N.**, and T.V. **Shkafina** 1981  
 Jensen, J.W. 1981  
**Komiyama, E.** et al. 1982  
 Laurent, P.J. 1982  
**Rombough, P.J.** et al. 1981  
**Salonius, P.O.** 1973  
 Shapovalov, L. et al. 1981  
 Went, A.E.J. 1974

## ECOLOGY

- Butorina, T.E.** et al. 1980  
 Craig, P.C., and L. **Haldorson** 1981  
 Everest, F.H., and W.R. **Meehan** 1981  
 Gruber, K., and W. **Wieser** 1983  
 Hindar, K., and B. **Jonsson** 1982  
**Rigler, F.H.** 1978  
**Savvaitova, K.A.** et al. 1980b

## FISHERIES

- Canada Department of Fisheries and Oceans 1984c  
 Craig, J.F., and J.M. **Fletcher** 1982  
**Dunbar, M.J.** 1970  
**Filipsson, O.** 1983  
 Fraley, J. et al. 1981  
**Hanzel, D.A.** 1980  
 Hunter, J.G. 1968  
 Johnson, L. 1983  
 Kristofferson, A.H. et al. 1982  
 Kristofferson, A.H., and D.K. **McGowan** 1981  
 Marrer, H. 1980  
 Moshenko, R.W. 1981

## FISHERIES, COMMERCIAL

- Carder, G.W.** 1981, 1983  
 Carder, G.W., and R.F. **Peet** 1983  
**Gillman, D.V.**, and A.H. **Kristofferson** 1984  
 Kristofferson, A.H., and G.W. **Carder** 1980  
 Ledrew, L.J., and J.B. **Dempson** 1982

## FISHERIES, SPORT

- Ellis, V.**, and B. **Bowler** 1981  
 Kristofferson, A.H., and R.D. **Sopuck** 1983  
 Moshenko, R.W. 1981

## FISHERY BIOLOGY

- Amann, E. 1980

## FOOD AND FEEDING HABITS

- Balon, E.K.** 1982  
**Dutil, J.D.** 1983  
 Elliott, C.L., and S. **Peck** 1980  
**Furukawa, T.** 1981  
 Hammar, J. 1983  
 Hammar, J. et al. 1983  
 Henderson, M.A. 1983  
**Hindar, K.**, and B. **Jonsson** 1982  
 Jensen, J.W. 1982  
**Jobling, M.** 1983a  
 Jobling, M., and A. **Wandsvik** 1983b, 1983c  
 Khorevin, L.II. et al. 1981  
**Langeland, A.** 1978, 1981  
 Leathe, S.A., and P.J. **Graham** 1981  
 Morton, W.M. 1982  
 Northcote, T.G. et al. 1977'  
 Pechnikov, A.S. 1980  
**Ruhle, C.** 1980  
 Steiner, V. 1984  
 Tabachek, J.L. 1984  
**Vasilenko, N.A.** et al. 1983  
 Wallace, J.C., and D. **Aasjord** 1984a  
 Wolf, E.G. et al. 1983

## GENERAL WORKS

- Canada Department of Fisheries and Oceans 1984a,  
 1984b  
 Legendre, V. 1980

## GENETICS

- Altukhov, Yu.P.** 1982  
 Andersson, L. et al. 1983

- Ferguson, A. 1981  
**Kartavtsev, Yu.F.** et al. 1983  
 Kaukoranta, M. et al. 1982  
**Kornfield, I.** et al. 1981  
 Kosyuk, G.N., and **S.N. Borkhsenius** 1981  
**Mednikov, B.M.** et al. 1980  
**Mitrofanov, Yu.A.** 1983  
 Phillips, R.B. 1983  
**Yu, P.A.** 1982  
**Zalenskii, A.O.** et al. 1980, 1981  
**Zelinskii, Yu.P.** et al. 1983
- GROWTH**
- Gustafson, K.J.** et al. 1981  
**Jobling, M.** 1983a, 1983b  
**Jobling, M.**, and **A. Wandsvik** 1983a  
 Kipling, C. 1984  
 Kipling, C., and **E.D. Le Cren** 1984  
**Kristjansson, J.** 1978  
 Leathe, S.A., and **P.J. Graham** 1981  
 Maekawa, K. 1978  
 Papst, M.H., and **G.E. Hopky** 1983a  
**Savvaitskaya, K.A.**, and **V.A. Maksimov** 1980  
**Wandsvik, A.**, and **M. Jobling** 1982a
- HYBRIDS**
- Honsing-Erlenburg, W. 1982  
 Leary, R.F. et al. 1983
- IMMUNOLOGICAL STUDIES**
- Kothbauer, H., and H. **Schenkel-Brunner** 1981  
 Nunomura, W. et al. 1983
- INTRODUCTIONS, STOCKING AND TRANSPLANTATION**
- Gustafson, K.J.** et al. 1981  
 Nordeng, H. 1983  
**Pedroli, J.C.** 1983  
 Rogers, A. 1980
- MIGRATIONS AND MOVEMENTS**
- Brannon, E.D.** 1984  
**Butorina, T.E.** 1983  
**Castonguay, M.**, and **G.J. Fitzgerald** 1982  
**Chereshnev, II.A.** 1982  
**Dick, T.A.**, and **M. Belosevic** 1981  
**Hanzel, D.A.** 1980  
**Jensen, J.W.** 1981  
**Kipling, C.**, and **E.D. Le Cren** 1984  
**Leathe, S.A.**, and **P.J. Graham** 1981  
**Sterfling, G.** 1980
- OLFACITION**
- Belghaug, R.**, and **K.B. Doving** 1977  
 Brannon, E.D. 1984  
**Doving, K.B.**, and **R. Belghaug** 1977  
**Doving, K.B.**, and **R. Selset** 1976  
**Doving, K.B.** et al. 1973a, 1973b, 1974, 1980  
 Jones, K.A., and **T.J. Hara** 1982  
**Selset, R.** 1980  
**Selset, R.**, and **K.B. Doving** 1980  
**Stabell, O.B.**, and **R. Selset** 1980  
**Thommesen, G.** 1982, 1983
- PARASITES AND OI SEASES**
- Bakke, T.A. 1982  
**Black, G.A.** 1982, 1983  
 Black, G.A., and **M.W. Lankester** 1981  
**Butorina, T.E.** 1980  
**Butorina, T.E.** et al. 1980  
**Connelly, J.J.**, and **T.K. McCarthy** 1984  
 Dick, T.A., and **M. Belosevic** 1981  
 Fryer, G. 1981  
**Halvorsen, O.** 1970  
**Halvorsen, O.**, and **K. Andersen** 1984  
 Hammar, J. et al. 1983  
 Heggberget, T.G., and **B.O. Johnsen** 1982  
**Malmberg, G.** 1973  
**Margolis, L.** et al. 1981  
 Molles, A. 1982  
 Moravec, F. et al. 1981  
 Nagasawa, K., and **S. Egusa** 1981  
 Nordeng, H. 1983  
 Watanabe, T. et al. 1980
- PHYSIOLOGY AND BIOCHEMISTRY**
- Butsuk, S.V.** and **B.I. Bessonov** 1981  
**Dannevig, B.H.**, and **T. Berg** 1978a, 1978b  
**Dannevig, B.H.**, and **K.R. Norum** 1979, 1982, 1983  
**Dannevig, B.G.** et al. 1981  
**Dutil, J.D.** 1983  
**Gnaiger, E.** et al. 1981  
**Gruber, K.**, and **W. Wieser** 1983  
 Honsing-Erlenburg, W. 1982  
 Ivankov, V.N., and **T.V. Shkafina** 1981  
 Jagoe, C.H., and **T.A. Haines** 1983  
**Jobling, M.** 1983b  
**Jobling, M.**, and **A. Wandsvik** 1983a  
 Kagawa, H. et al. 1981  
**Maksimovich, A.A.** 1981  
**Matsuno, T.** et al. 1980  
**Miyauchi, M.**, and **M. Takagi** 1981  
 Nagahama, Y. et al. 1982  
 Numomura, W. et al. 1983  
 Tabachek, J.L. 1984  
 Weld, J.K., and **R. Selset** 1977, 1978
- POLLUTION STUDIES**
- Batterman, A.R., and **P.M. Cook** 1981  
**Cowx, I.G.** 1982  
 Jagoe, C.H. and **T.A. Haines** 1982, 1983  
 Jagoe, C.H. et al. 1984  
**Miyauchi, M.**, and **M. Takagi** 1981  
 Monod, G. 1983  
 Monod, G., and **G. Keck** 1982  
 Rogers, I.H., and **H.W. Mahood** 1982  
 Scruton, D.A. 1984  
 Skaftason, J.F., and **T. Johannesson** 1982  
 Thomas, R.E., and **S.D. Rice** 1981
- POPULATION STUDIES**
- Borisovets, E.F.** 1982  
 Oempson, J.B., and **R.K. Misra** 1984  
**Gillman, D.V.**, and **A.H. Kristofferson** 1984  
**Glova, G.J.**, and **P.J. McCart** 1978  
**Glubokovskii, M.K.** 1980  
 Johnson, L. 1983  
 Kristofferson, A.H., and **R.D. Sopuck** 1983  
 Nordeng, H. 1983

## REPRODUCTION

- Andersen, R. 1982  
 Ivankov, V. N., and **N.I. Sergienko** 1984  
**Jonsson, B.**, and K. Hindar 1982  
**Jonsson, B.** et al. 1984  
 Kipling, C. 1984  
 Maekawa, K. 1983  
**Maruyama, T.** 1981  
 Monod, G. 1983  
 Nakamura, M. 1982  
 Onozato, H., and E. Yamaha 1983  
**Ruhle, C.** 1980  
 Rukhlov, F.N. 1980  
 Stein, H. 1981  
 Wallace, J.C., and D. Aajord 1984b

## REVIEWS

- Corkum, L. D., and **P.J. McCart** 1981

## TAXONOMY

- Bagiryan, S.Sh.** 1981  
 Chereshnev, I.A. 1982  
 Ferguson, A. 1981  
**Glubokovskii**, M. K., and I.A. Chereshnev 1981  
 Honsing-Erlenburg, W. 1982  
 Kaukoranta, M. et al. 1982  
 Nesterov, V. D., and **K.A. Savvaitova** 1981  
 Nyman, L. et al. 1981  
**Pichugin, M.Yu.** 1983  
**Savvaitova, K.A.** 1983  
**Savvaitova, K.A.**, and V.A. Maksmov 1980  
**Savvaitova, K.A.** et al. 1980a, 1980b, 1981  
**Vasil'eva, E.D.** 1981a, 1981b  
 Volobuyev, V.V. et al. 1979  
**Yu, P.A.** 1982