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A Bibliography of Anomalies of Fishes, Supplement 2

C.E. Dawson

Gulf Coast Research Laboratory

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A BIBLIOGRAPHY OF ANOMALIES
OF FISHES

Supplement 2

C. E. Dawson
Gulf Coast Research Laboratory
Ocean Springs, Mississippi

This listing adds 213 titles to the original bibliography (Gulf Res. Repts. 1(6), 1964) and the 1966 supplement (Gulf Res. Repts. 2(2):169-176). Although a number of previously overlooked references are included, there are 137 citations of works published during the 1965-70 period. The frequency of recent publications offers some indication of the current worldwide interest in problems of fish teratology.

Apparently in response to increased interest in the environment, some American authors are now attempting to relate anomalies in natural or "wild" populations of fishes to pollution levels. While this may be a useful area of investigation, the results should be evaluated with caution. It is obvious that only sub-lethal conditions are observed and there are few data, especially in marine or estuarine environments, upon which to establish a "normal" survival potential for a particular abnormality in any species. Those hoping to use published records to establish a "base-line" should bear in mind that, with few exceptions, both old and recent publications report only the most obvious and striking conditions (macro-anomalies). Investigators attempting to determine frequencies of abnormalities should include data on the less obvious and possibly very common micro-anomalies.

This supplement includes an Index of Sources and Abbreviations covering those journals not included in the original bibliography. As in the previous supplement, titles are serially numbered and prefixed by the letter "S"; the prefix has been omitted from the index listings. Corrections to be made in the original bibliography are indicated under Corrigenda.

I again wish to express my continuing appreciation to those colleagues who have provided reprints of their papers or otherwise contributed to this bibliography.

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INDEX OF SOURCES AND ABBREVIATIONS

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 Advan. Mar. Biol.—Advances in Marine Biology. Academic Press, N. Y.
 An. Congr. Lat-Amer. Zool.—Anais do Congresso Latino-Americana de Zoologia. São Paulo.
 Ann. Fac. Sci. Univ. Dakar—Annales de la Faculté des sciences, Université de Dakar.
 Ann. Mus. Stor. nat. Genova—Annali del Museo civico di storia naturale. Genova.
 Ann. Parasit. hum. comp.—Annales de parasitologie humaine et comparée. Paris.
 Arch. Environ. Health—Archives of Environmental Health. London.
 Arch. FischWiss.—Archiv für Fischereiwissenschaft. Hamburg.
 Arq. Estac. Biol. mar. Univ. Ceara—Arquivos. Estacao de Biologia Marinha. Universidad do Ceará. Fortaleza.
 Bol. Soc. Cear. Agron.—Boletim da Sociedade cearense de agronomia. Ceara.
 Bull. Bingham oceanogr. Coll.—Bulletin of the Bingham Oceanographic Collection. New Haven, Conn.
 Bull. Cent. Etude Rech. sci., Biarritz.—Bulletin du Centre d'études et de recherches scientifiques. Biarritz.

- Bull. Mar. Sci.—Bulletin of Marine Science. Miami, Fla.
- Bull. mens. Soc. linn. Lyon.—Bulletin Mensuel de la Société Linnéenne de Lyon. Lyon.
- Bull. Misaki Mar. biol. Inst.—Bulletin of the Misaki Marine Biological Institute. Kyoto University. Kyoto.
- Bull. Pacif. Mar. Fish. Comm.—Bulletin of the Pacific Marine Fisheries Commission. Portland, Ore.
- Bull. U. S. Nat. Mus.—Bulletin of the United States National Museum, Washington, D. C.
- Caca e Pesca—Caca e Pesca. São Paulo.
- Ciênc. e Cult.—Ciência e Cultura. Revista da Sociedade Brasileira para o Progresso da Ciência. São Paulo.
- Contr. Fish Comm. Ore.—Contributions. Oregon Fish Commission. Portland, Ore.
- Contr. Sch. Fish. Univ. Wash.—Contributions. School of Fisheries. University of Washington. Seattle, Wash.
- Contr. Sci. Los Angeles Cty. Mus.—Contributions in Science. Los Angeles County Museum. Los Angeles, Calif.
- Crustaceana—Crustaceana. Leiden.
- Csl. Rybárst.—Ceskoslovenské Rybárstvi. Prague.
- Dopov. Akad. Nauk. ukr. RSR—Dopovidi Akademiyi nauk Ukrayins'koyi RSR. Kiev.
- Drum and Croaker—Drum and Croaker. Palos Verdes, Calif.
- Embryologia, Nagoya—Embryologia. Nagoya University. Nagoya.
- Fauna, Oslo—Fauna. Norsk Zoologisk Tidsskrift. Oslo.
- Fischereiwelt—Fischereiwelt. Hamburg.
- Fischwirtschaft—Fischwirtschaft. Bremmerhaven.
- Gerontologia—Gerontologia. Basel, N. Y.
- Invest. pesq.—Investigación pesquera. Barcelona.
- Israel J. Zool.—Israel Journal of Zoology. Tel Aviv.
- J. Miss. Acad. Sci.—Journal of the Mississippi Academy of Sciences. Jackson, Miss.
- J. Parasit.—Journal of Parasitology. Lancaster, Pa.
- J. Zool., London—Journal of Zoology. London.
- London Nat.—London Naturalist. London.
- Lucrar. Stat. zool. mar. Agigea—Lucrarile ale Statiei zoologice maritime 'Regele Ferdinand I' della Agigea.
- Mem. Ist. ital. Idrobiol. de Marchi—Memorie dell'Instituto Italiano di Idrobiologia Dott. Marco de Marchi. Milano.

- Nat. Wales—Nature in Wales. Orielson.
- Notas Estud. Inst. Biol. marit.—Notas e estudos do Instituto de biologia maritima. Lisbon.
- Notul. nat. Acad. Philad.—Notulae Naturae. Academy of Natural Sciences of Philadelphia. Philadelphia, Pa.
- N. Y. Fish Game J.—New York Fish and Game Journal. Albany, N. Y.
- Opusc. zool. Inst. zoosyst Univ. budapest—Opuscula Zoologica. Instuti Zoosystematici Universitatis Budapestinensis. Budapest.
- Pacific Sci.—Pacific Science. Honolulu, Hi.
- Pakist. J. Sci. indust. Res.—Pakistan Journal of Science and Industrial Research. Karachi.
- Physis. B. Aires—Revista de la Sociedad argentina de ciencias naturales. Buenos Aires.
- Proc. biol. Soc. Wash.—Proceedings of the Biological Society of Washington. Washington, D. C.
- Proc. Calif. Acad. Sci.—Proceedings of the California Academy of Sciences. San Francisco, Calif.
- Proc. Conf. stheast. Ass. Game Commrs.—Proceedings of the Annual Conference of the Southeastern Association of Game and Fish Commissioners. Columbia, S. C.
- Proc. int. Congr. Zool.—Proceedings of the International Congress of Zoology. London.
- Proc. Leeds phil. lit. Soc.—Proceedings of the Leeds Philosophical and Literary Society. Leeds.
- Proc. Mont. Acad. Sci.—Proceedings of the Montana Academy of Sciences. Missoula, Mont.
- Proc. nat. Acad. Sci. India—Proceedings of the National Academy of Sciences of India. Allahabad.
- Przepl. Zool.—Przeplad Zoologiczny. Warsaw.
- Publ. Serv. Piscic. Bras.—Publicões. Servico de piscicultura, Brasil. Fortaleza.
- Publs. Carnegie Instn.—Publications of the Carnegie Institution of Washington. Washington, D. C.
- Quart. J. Fla. Acad. Sci.—Quarterly Journal of the Florida Academy of Sciences. Tallahassee, Fla.
- Res. Briefs—Research Briefs. Oregon Fish Commission. Portland, Ore.
- Res. Bull. Punjab Univ. Sci.—Research Bulletin of the Punjab University of Science. Hoshiarpur.

- Rev. Trav. Inst. Pêche. marit.—Revue des Travaux de l'Institut des Pêches Maritimes. Paris.
- Rev. Trav. Off. Pêche. marit.—Revue des Travaux de l'Office des Pêches Maritimes. Paris.
- Schr. naturw. Ver. Schlesw.-Holst.—Schriften des Naturwissenschaftlichen Vereins für Schleswig-Holstein. Kiel.
- Scot. Fish. Bull.—Scottish Fisheries Bulletin. Edinburgh.
- Skr. Komm. Havunders.—Skrifter udg. of Kommissionen for Havundersogelser. Copenhagen.
- Texas J. Sci.—Texas Journal of Science. Houston, Tex.
- Tijdschr. ned. dierk. Ver.—Tijdschrift der Nederlandse Dierkundige Vereeniging. Leiden.
- Trav. Sebast. biol. Sta.—Trudŷ Sevastopol'skoĭ biologicheskoi stantsii Akademiya nauk SSSR.
- Trop. Fish Hobbyist—Tropical Fish Hobbyist. Jersey City, N. J.
- Trud. Inst. Biol. Vodokhr.—Trudŷ Instituta biologii vodokhranilishch. Akademiya nauk SSSR. Moskow.
- Underw. Nat.—Underwater Naturalist. Bulletin of the American Littoral Society. Highlands, N. J.
- Vet. Rec.—Veterinary Record. London.
- Wassman J. Biol.—Wassman Journal of Biology. San Francisco, Calif.
- Zool. Polon.—Zoologica Poloniae. Breslau.
- Zool. Zh.—Zoologicheskii zhurnal. Moskow.

CORRIGENDA

The following corrections should be entered in the appropriate sections of the original bibliography (Gulf Res. Repts. vol. 1, no. 6).

Reference	Correction
Title 447	To read: 40 (4) :564-571
" 561	Change: "rav" to ray
" 681	Change date to: 1903
" 925	To read: 27:263-264
" 953	To read: myctéridoide
" 993	Add: Univ. Paris (A) 244:1-179, 26 figs.
" A 15	To read: (Cuvier)
Page 371	To read: <i>Katsuwonus pelamys</i> — 465.
" 374	Syngnathidae: add—194, 195.
" 376	Pug-head, etc.: delete—555.
" 385	Collect. & Breed.: add—saishu to siiku