

- Aalbers, S.A., and M.A. Drawbridge 2008. White seabass spawning behavior and sound production. *Trans. Amer. Fish. Soc.*, 137(2):542-550.
- Able, K.W. 1984. Variation in spawning site selection of the mummichog, *Fundulus heteroclitus*. *Copeia*, 1984:522-525.
- Able, K.W., D.F. Markle, and M.P. Fahay 1984. Cyclopteridae: development. Pp. 428-437. In: *Ontogeny and systematics of fishes*, H. G. Moser et al. (eds.), Am. Soc. Ichthyol. Herpetol., Spec. Publ. No 1.
- Adreani, M., and L.G. Allen. 2008. Mating system and reproductive biology of the temperate wrasse, *Halichoeres semicinctus*. *Copeia*, 2:466-474.
- Adreani, M.S., B.E. Erisman, and R.R. Warner 2004. Courtship and spawning behavior in California sheephead, *Semicossyphus pulcher* (Pisces: Labridae). *Environ. Biol. Fish.*, 71:13-19.
- Ainley, D.G., W.J. Sydeman, R.H. Parrish, and W.H. Lenarz 1993. Oceanic factors influencing distribution of young rockfish (Sebastes) in central California: a predator's perspective. *CalCOFI Rep.* 34:133-139.
- Allain, V. 1999. Fecundity of the deep-sea fish in the north-east Atlantic *Alepocephalus bairdii* (Pisces: Alepocephalidae). *J. Mar. Biol. Assoc. UK*, 79:765-767.
- Alcalay, O.M., and P.C. Sikkel. 1994. Diel periodicity of hatching of demersal eggs in the temperate damselfish, *Hypsypops rubicundus*. *Bull. Mar. Sci.*, 54:565-569.
- Alekseyev, F.Y., Y I. Alekseyeva, and Y.I. Kukuyev. 1982. Some morphological features and state of the ovaries in the rare deepsea fishes *Opisthoproctus soleatus* and *Rhynchohyalus natalensis*, Opisthoproctidae (Salmoniformes) from the Sargasso Sea. *J. Ichthyol.*, 22:141-147.
- Allen, L.G., C. Won, D.G. Bolser, and B.E. Erisman 2020. Feasibility of hydroacoustic surveys of spawning aggregations for monitoring barred sand bass populations off southern California. *Calif. Fish Wildl.*, 106:139-155.
- Allen, L.G., E.S. Ladin, and T.J. Rowell 2020. Sound production and mechanism in the Giant Sea Bass, *Stereolepis gigas* (Polyprionidae). *Copeia*, 108(4):809-814.
- Ambrose, D.A., and H.G. Moser. 1988. Rearing, development, and early life history of the California needlefish, *Strongylura exilis*. *Rev. Francaise Aquariol. Herpetol.*, 15:43-48.
- Amezcuca-Linares, F., Z.G. Castillo-Rodriguez, and M. Alvarez-Rubio. 1992. Feeding and reproduction of the sole *Achirus mazatlanus* (Steindachner, 1869) in the Agua Brava coastal lagoon system, Mexican Pacific. *An. Inst. Cienc. Mar. Limnol. Univ. Nac. Auton. Mex.*, 19:181-194.
- Amundsen, T., 2003. Fishes as models in studies of sexual selection and parental care. *J. Fish Biol.*, 63:17-52.
- Andersson, M., and Simmons, L.W., 2006. Sexual selection and mate choice. *Trends Ecol. Evol.*, 21(6):296-302.
- Andrianov, D.P., and V.E. Bekker. 1989. Reproductive biology of mesopelagic fishes of the Eastern Pacific. *J. Ichthyol.*, 29:43-48.
- Arruda, L.M. 1988. Maturation cycle in the female gonad of the snipefish, *Macrorhamphosus gracilis* (Lowe, 1839) (Gasterosteiformes, Macrorhamphosidae), off the western coast of Portugal. *Invest. Pesq.*, 52:355-374.
- Asoh, K., and D.Y. Shapiro. 1997. Bisexual juvenile gonad and gonochorism in the fairy basslet, *Gramma loreto*. *Copeia*, 1997:22-31.
- Asoh, K., and T. Yoshikawa. 1996. Nesting behavior, male parental care, and embryonic

- development in the fairy basslet, *Gramma loreto*. Copeia, 1996:1–8.
- Asoh, K., T. Yoshikawa, and M. Kasuya. 2001. Gonadal development and non-functional protogyny in a coral-reef damselfish, *Dascyllus albisella*. J. Fish Biol., 58:1601–1616.
- Babel, J.S. 1967. Reproduction, life history, and ecology of the round stingray *Urolophus halleri* Cooper. Calif. Fish Game, Fish Bull., 137:1–104.
- Baelde, P. 1996. Biology and dynamics of the reproduction of blue-eye trevalla, *Hyperoglyphe antarctica* (Centrolophidae), off Tasmania, southern Australia. Fish. Bull., 94:199–211.
- Baez, M., and L. Alvarez-Lajonchere. 1983. Age, growth and reproduction of *Gerres cinereus* (Walbaum, 1792) from Tunas de Zaca, Cuba. Rev. Invest. Mar. Mex. City, 4:41–75.
- Bagenal, T.B. 1971. The inter-relation of the size of fish eggs, the date of spawning and the production cycle. J. Fish Biol., 3:207–219.
- Bagnara, J.T., and M.E. Hadley. 1973. Chromatophores and color change. Prentice Hall.
- Baird, R.C., and G.Y. Jumper. 1995. Encounter models and deep-sea fishes: numerical simulations and the mate location problem in *Sternoptyx diaphana* (Pisces, Sternoptychidae). Deep-Sea Res. Part I— Oceanog. Res. Pap., 42:675–696.
- Baird, R.C., G.Y. Jumper, and E.E. Gallaher. 1990. Sexual dimorphism and demography in two species of oceanic midwater fishes (Stomiiformes: Sternoptychidae) from the eastern Gulf of Mexico. Bull. Mar. Sci., 47:561–566.
- Bakker, T.C.M., and W.J. Rowland. 1995. Male mating preference in sticklebacks: effects of repeated testing and own attractiveness. Behaviour, 132:935–949.
- Balart, E.F., J. Gonzalez-Garcia, and C. Villavicencio-Garayzar. 2000. Notes on the biology of *Cephalurus cephalus* and *Parmaturus xaniurus* (Chondrichthyes: Scyliorhinidae) from the west coast of Baja California Sur, Mexico. Fish. Bull., 98:219–221.
- Balebail, S., and J.A. Sisneros. 2022. Long duration advertisement calls of nesting male plainfin midshipman fish are honest indicators of size and condition. J. Exp. Biol., 225(8):
- Balshine, S., 2012. Patterns of parental care in vertebrates. Pp. 62-81. In: The evolution of parental care. N.J. Royle, P.T. Smiseth and M. Kölliker (eds.). Oxford Univ. Press.
- Baltz, D.M. 1984. Life history variation among female surfperches (Perciformes: Embiotocidae). Environ. Biol. Fish., 10:159–171.
- Barlow, G.W. 1981. Patterns of parental investment, dispersal and size among coral-reef fishes. Environ. Biol. Fish., 6:65–85.
- Barlow, G.W. 1984. Patterns of monogamy among teleost fishes. Archiv. Fischwiss., 35(1):75–123.
- Barneche, D.R., D.R. Robertson, C.R. White, and D.J. Marshall 2018. Fish reproductive-energy output increases disproportionately with body size. Science, 360:642-645.
- Barnett, A.M., and A.E. Jahn. 1987. Pattern and persistence of a nearshore planktonic ecosystem off Southern California. Cont. Shelf Res., 7:1–25.
- Barni, A., C. Mazzoldi, and M.B. Rasotto. 2001. Reproductive apparatus and male accessory structures in two batrachoid species (Teleostei, Batrachoididae). J. Fish Biol., 58:1557–1569.
- Basolo, A.L. 1990a. Female preference predates the evolution of the sword in swordtail fish. Science, 250:808–810.
- Basolo, A.L. 1990b. Female preference for male sword length in the green swordtail, *Xiphophorus helleri* (Pisces: Poeciliidae). Anim. Behav., 40:332–338.
- Bass, A.H. 1993. From brains to behavior—hormonal cascades and alternative mating tactics in teleost fishes. Rev. Fish Biol. Fish., 3: 181–186.

- Bastock, M., 2018. Courtship: an ethological study. Routledge.
- Bean, K., B.D. Mapstone, C.R. Davies, C.D. Murchie, and A.J. Williams. 2003. Gonad development and evidence of protogyny in the red-throat emperor on the Great Barrier Reef. *J. Fish Biol.*, 62:299–310.
- Bell, M.A., and S.A. Foster (eds.). 1994. The evolutionary biology of the threespine stickleback. Oxford Univ. Press.
- Berglund, A. 1997. Mating systems and sex allocation. Pp. 237–265. In: Behavioral ecology of teleost fishes. J.-G. J. Godin (ed.). Oxford Univ. Press.
- Berglund, A., and G. Rosenqvist. 2001. Male pipefish prefer ornamented females. *Anim. Behav.*, 61:345–350.
- Bergstad, O.A. 1993. Distribution, population structure, growth and reproduction of the greater silver smelt, *Argentina silus* (Pisces, Argentinidae), of the Skagerrak and the north-eastern North Sea. *ICES J. Mar. Sci.*, 50:129–143.
- Berkeley, S.A., C. Chapma, and S.M. Sogard 2004. Maternal age as a determinant of larval growth and survival in a marine fish, *Sebastes melanops*. *Ecology*, 85:1258-1264.
- Besseau, L., and S. Brusle-Sicard. 1995. Plasticity of gonad development in hermaphroditic sparids: ovotestis ontogeny in a protandric species, *Lithognathus mormyrus*. *Environ. Biol. Fish.*, 43:255–267.
- Blom, E.L., Mück, I., Heubel, K. and Svensson, O., 2016. Acoustic and visual courtship traits in two sympatric marine Gobiidae species—*Pomatoschistus microps* and *Pomatoschistus minutus*. *Environ. Biol. Fish.*, 99:999-1007.
- Blom, E.L., Wilson, J., Kvarnemo, C., Amorim, M.C.P. and Svensson, O., 2022. Male acoustic display in the sand goby—essential cue in female choice, but unaffected by supplemental feeding. *J. Exp. Mar. Biol. Ecol.*, 556:151791.
- Blumer, L.S. 1979. Male parental care in the bony fishes. *Q. Rev. Biol.* 54:149–161.
- Blumer, L.S. 1982. A bibliography and categorization of bony fishes exhibiting parental care. *Zool. J. Linn. Soc.*, 75:1–22.
- Boehlert, G.W., and M. M. Yoklavich. 1984. Reproduction, embryonic energetics and maternal-fetal relationship in the viviparous genus *Sebastes* (Pisces: Scorpaenidae). *Biol. Bull.*, 167:354–370.
- Boehlert, G.W., M. Kusakari, and J. Yamada. 1991. Oxygen consumption of gestating female *Sebastes schlegeli*: estimating the reproductive costs of live-bearing. *Environ. Biol. Fish.*, 30:81–89.
- Boehlert, G.W., M. Kusakari, M. Shimizu, and J. Yamada. 1986. Energetics during embryonic development in kurosoi, *Sebastes schlegeli* Hilgendorf. *J. Exp. Mar. Biol. Ecol.*, 101:239–256.
- Bolin, R.L. 1941. Embryonic and early larval stages of the cottid fish *Orthonopias triacis* Starks and Mann. *Stanford Ichthyol. Bull.*, 2: 73–82.
- Bolin, R.L. 1944. A review of the marine cottid fishes of California. *Stanford Ichthyol. Bull.* 3:1–135.
- Bond, E.C., A. Barraza and K.L. Forsgren 2017. Reproductive morphology of male Black Perch (*Embiotoca jacksoni*). *Bull. S. Calif. Acad. Sci.*, 116(3):219-226.
- Bond, E.R. and K.L. Forsgren 2022. External reproductive structures of male surfperches (Embiotocidae): Urogenital papilla. *Anatom. Rec.*, 305(7):1712-1723.
- Borquez, R.A., P.A. Olivares, and M.L. Tapia. 1988. Gonadal structure and sexual inversion in “cabrilla comun” *Paralabrax humeralis* Valenciennes, 1828 (Pisces, Serranidae). *Estud.*

- Oceanol. Inst. Oceanol., Univ. Antofagasta, 7:51–58.
- Bortone, S.A. 1974. *Diplectrum rostrum*, a hermaphroditic new species (Pisces: Serranidae) from the eastern Pacific coast. *Copeia*, 1974:61–65.
- Bortone, S.A. 1977. Gonad morphology of the hermaphroditic fish *Diplectrum pacificum* (Serranidae). *Copeia*, 1977:448–453.
- Bose, A.P.H. 2022. Parent–offspring cannibalism throughout the animal kingdom: a review of adaptive hypotheses. *Biol. Rev.*, 97:1868–1885.
- Bose, A.P.H., G.B. McClelland, and S. Balshine. 2016. Cannibalism, competition, and costly care in the plainfin midshipman fish *Porichthys notatus*. *Behav. Ecol.*, 27:628–636.
- Bose, A., M.J. Lau, K.M. Cogliati, B. Neff, and S. Balshine. 2019. Cannibalism of young is related to low paternity and nest take-overs in an intertidal fish. *Anim. Behav.*, 153:41–48.
- Boundka, B., M.H. Ktari, and J.P. Quignard. 1998. Sexuality, sexual cycle and reproduction of uranoscopus (*Uranoscopus scaber*) of Tunisia. *Vie et Milieu*, 48:63–69.
- Bradbury, J.W., and S.L. Vehrencamp. 1998. Principles of animal communication. Sinauer Associates, Inc.
- Brantley, R.K., and A.H. Bass. 1994. Alternative male spawning tactics and acoustic signals in the midshipman fish, *Porichthys notatus* (Teleostei, Batrachoididae). *Ethology*, 96:213–232.
- Breder, C.M., Jr., and D.E. Rosen. 1966. Modes of reproduction in fishes. TFH Publications.
- Breitburg, D.L. 1987. Interspecific competition and the abundance of nest sites: factors affecting sexual selection. *Ecology*, 68:1844–1855.
- Brodeur, R.D., B.W. Frost, S.R. Hare, R.C. Francis, and W.J. Ingraham. 1996. Interannual variations in zooplankton biomass in the Gulf of Alaska, and covariation with California Current biomass. *CalCOFI Rep.*, 37:80–99.
- Brothers, E.B. 1975. The comparative ecology and behavior of three sympatric California gobies. Ph.D. diss., Univ. California, San Diego.
- Brown-Peterson, N.J., R.M. Overstreet, J.M. Lotz, J.S. Franks, and K.M. Burns. 2001. Reproductive biology of the cobia, *Rachycentron canadum*, from coastal waters of the southern United States. *Fish. Bull.*, 99:15–28.
- Budd, P.L. 1940. Development of the eggs and early larvae of six California fishes. *Calif. Dep. Fish Game, Fish Bull.*, 56:1–53.
- Buxton, C.D., and P.A. Garratt. 1990. Alternative reproductive styles in seabreams (Pisces: Sparidae). *Environ. Biol. Fish.*, 28:113–124.
- Caddell, S.M. 1988. Early life history descriptions of the deepbody and slough anchovies with comparisons to the northern anchovy (family Engraulidae). *Bull. Mar. Sci.*, 42:273–291.
- Campbell, B.C., and K.W. Able. 1998. Life history characteristics of the northern pipefish, *Syngnathus fuscus*, in southern New Jersey. *Estuaries*, 21:470–475.
- Canino, M.F., I.B. Spies, J.L. Guthridge, and M.M. Hollowed. 2008. Genetic assessment of the mating system and patterns of egg cannibalism in Atka mackerel, *Mar. Coast. Fish.*, 3:388–398.
- Carlisle, S.L., S.K. Marxer-Miller, A.V. M. Canario, R.F. Oliveira, L. Carneiro, and M.S. Grober. 2000. Effects of 11-ketotestosterone on genital papilla morphology in the sex changing fish *Lythrypnus dalli*. *J. Fish Biol.*, 57:445–456.
- Carolsfeld, J., M. Tester, H. Kriebeg, and N.M. Sherwood. 1997. Pheromone-induced spawning of Pacific herring: I, Behavioral characterization. *Horm. Behav.*, 31:256–268.

- Casadevall, M., M. Munoz, M. Carrasson, and J. Matallanas. 2001. The reproductive cycle of *Ophichthus rufus* (Anguilliformes) in the Northwest Mediterranean. *Cybum*, 25:53–65.
- Chambers, R.C., and W. C. Leggett. 1996. Maternal influence on variation in egg sizes in temperate marine fishes. *Am. Zool.*, 36:180–196.
- Chan, T.T.C., and Y. Sadovy. 2002. Reproductive biology, age and growth in the chocolate hind, *Cephalopholis boenak* (Bloch, 1790), in Hong Kong. *Mar. Freshwat. Res.*, 53:791–803.
- Chan, T.T. and Sadovy, Y., 2002. Reproductive biology, age and growth in the chocolate hind, *Cephalopholis boenak* (Bloch, 1790), in Hong Kong. *Mar. Fish. Rev.*, 53(4):791-803.
- Chapman, F.A., J.P. Van Eenennaam, and S.I. Doroshov. 1996. The reproductive condition of the white sturgeon, *Acipenser transmontanus*, in San Francisco Bay, California. *Fish. Bull.*, 94:628–634.
- Chen, C.T., K M. Liu, and Y.-C. Chang. 1997. Reproductive biology of the bigeye thresher shark, *Alopias superciliosus* (Lowe, 1839) (Chondrichthyes: Alopiidae), in the northwestern Pacific. *Ichthyol. Res.*, 44:227–235.
- Childress, J.J., S.M. Taylor, G.M. Cailliet, and M.H. Price. 1980. Patterns of growth, energy utilization and reproduction in some meso and bathypelagic fishes off Southern California. *Mar. Biol.*, 61:27–40.
- Choi, C.Y., A. Takemura, and K. Takano. 1996. Ovarian development and changes in serum vitellogenin during the annual reproductive cycle of the female fusilier, *Caesio diagramma*. *Galaxea* 13:35–45.
- Christophe, B., and F. Baguet. 1985. Seasonal variations of luminescence in photophores of *Porichthys notatus* (Teleostei: Batrachoididae). *Ann. Soc. Roy. Zool. Belg.* 115: 197–201.
- Clancey, J.F. 1956. A contribution to the life history of the fish, *Bregmaceros atlanticus* Goode and Bean, from the Florida Current. *Bull. Mar. Sci. Gulf Carib.*, 6:233–260.
- Clark, B.L. and L.G. Allen 2018. Field observations on courtship and spawning behavior of the Giant Sea Bass, *Stereolepis gigas*. *Copeia*, 106(1): 171–179.
- Clark, M.R., D.J. Fincham, and D.M. Tracey. 1994. Fecundity of orange roughy (*Hoplostethus atlanticus*) in New Zealand waters. *N. Z. J. Mar. Freshwat. Res.*, 28:193–200.
- Clarke, T.A. 1970. Territorial behavior and population dynamics of a pomacentrid fish, the garibaldi, *Hypsypops rubicunda*. *Ecol. Monogr.*, 40:189–212.
- Clutton-Brock, T., 2007. Sexual selection in males and females. *Science*, 318(5858): 1882-1885.
- Cole, K.S. 1982. Male reproductive behavior and spawning success in a temperate zone goby, *Coryphopterus nicholsi*. *Can. J. Zool.* 60: 2309–2316.
- Cole, K.S. 1983. Protogynous hermaphroditism in a temperate zone territorial marine goby, *Coryphopterus nicholsi*. *Copeia*, 1983:809–812.
- Cole, K.S. 1990. Patterns of gonad structure in hermaphroditic gobies (Teleostei: Gobiidae). *Environ. Biol. Fish.*, 28:125–142.
- Cole, K.S. 2003. Hermaphroditic characteristics of gonad morphology and inferences regarding reproductive biology in *Caracanthus* (Teleostei, Scorpaeniformes). *Copeia*, 2003(1):68–80.
- Cole, K.S., and D.Y. Shapiro. 1990. Gonad structure and hermaphroditism in the gobiid genus *Coryphopterus* (Teleostei: Gobiidae). *Copeia*, 1990:996–1003.
- Cole, K.S., D.R. Robertson, and A.A. Cedeno. 1994. Does gonad structure reflect sexual pattern in all gobiid fishes? *Environ. Biol. Fish.*, 41:301–309.
- Cole, K.S. 1988. Predicting the potential for sex-change on the basis of ovarian structure in

- gobiid fishes. *Copeia*, 1988:1082–1086.
- Coleman, R.M. 1999. Parental care in intertidal fishes. Pp. 165–180. In: *Intertidal fishes: life in two worlds*, M.H. Horn, K.L.M. Martin, and M. Chotkowski (eds.). Academic Press.
- Coleman, R.M. 1992. Reproductive biology and female parental care in the cockscomb prickleback *Anoplarchus purpureus* (Pisces: Stichaeidae). *Environ. Biol. Fish.*, 35:177–186.
- Colin, P.L., and I. Clavijo. 1978. Mass spawning by the spotted goatfish, *Pseudupeneus maculatus* (Bloch) (Pisces: Mullidae). *Bull. Mar. Sci.*, 28:780–782.
- Colman, J.G. 1997. A review of the biology and ecology of the whale shark. *J. Fish Biol.*, 51:1219–1234.
- Colombo, L., A. Marconato, P.C. Belvedere, and C. Frisco. 1980. Endocrinology of teleost reproduction: a testicular steroid pheromone in the black goby, *Gobius joso* L. *Boll. Zool.*, 47:355–364.
- Conand, C. 1975. Sexual maturity and fecundity of the bluefish *Pomatomus saltator* (L., 1766), Pomatomidae. *Bull. Inst. Fondam., Afr. Noire, Ser. A*, 37(2):395–466.
- Cooke, S.J., Philipp, D.P., Wahl, D.H. and Weatherhead, P.J., 2006. Energetics of parental care in six syntopic centrarchid fishes. *Oecologia*, 148:235–249.
- Cowen, R.K. 1985. Large scale pattern of recruitment by the labrid, *Semicossyphus pulcher*: causes and implications. *J. Mar. Res.*, 43:719–742.
- Cowen, R.K. 1990. Sex change and life history patterns of the labrid, *Semicossyphus pulcher*, across an environmental gradient. *Copeia*, 1990: 787–795.
- Cox, K.W. 1963. Egg-cases of some elasmobranchs and a cyclostome from Californian waters. *Calif. Fish Game*, 49:271–289.
- Coyer, J.A. 1982. Observations on the reproductive behavior of the giant kelpfish, *Heterostichus rostratus* (Pisces: Clinidae). *Copeia*, 1982: 344–350.
- Crabtree, R.E., D. Snodgrass, and C.W. Harnden. 1997b. Maturation and reproductive seasonality in bonefish, *Albula vulpes*, from the waters of the Florida Keys. *Fish. Bull.*, 95:456–465.
- Crabtree, R.E., E.C. Cyr, D.C. Chaverri, W.O. Mclarney, and J.M. Dean. 1997a. Reproduction of tarpon, *Megalops atlanticus*, from Florida and Costa Rican waters and notes on their age and growth. *Bull. Mar. Sci.*, 61:271–285.
- Crane, J.M. 1965. Bioluminescent courtship display in the teleost *Porichthys notatus*. *Copeia*, 1965:239–241.
- Cross, J.L. 1988. Aspects of the biology of two scyliorhinid sharks, *Apristurus brunneus* and *Parmaturus xaniurus*, from the upper continental slope off Southern California. *Fish. Bull.*, 86:691–702.
- Crow, K.D., D.A. Powers, and G. Bernardi. 1997. Evidence for multiple contributors in nests of kelp greenling (*Hexagrammos decagrammus*, Hexagrammidae). *Copeia*, 1997:9–15.
- Dasilao, J.C., Jr., S. Umeda, and K. Yamaoka. 1998. Early morphogenesis of flyingfish, *Cypselurus heterurus doederlini* (Teleostei: Exocoetidae). *Bull. Mar. Sci. Fish., Kochi Univ.*, (18):1–11.
- Dawkins, R., and T.R. Carlisle. 1976. Parental investment, mate desertion and a fallacy. *Nature*, 262:131–133.
- Dawson, C.E. 1982. Atlantic sand stargazers (Pisces: Dactyloscopidae), with descriptions of one new genus and seven new species. *Bull. Mar. Sci.*, 32:14–85.
- De la Cruz Aguero, J., y colaboradores. 1997. Catalogo de los Peces Marinos de Baja California

Sur. Instituto Politecnico Nacional, Centro Interdisciplinario de Ciencias Marinas, Comision Nacional para el Conocimiento y Uso de la Biodiversidad. La Paz, B. C. S., Mexico.

- Dedual, M., and N.W. Pankhurst. 1992. Plasma steroid hormone concentrations in relation to the reproductive cycle of the sweep *Scorpius lineolatus* (Kyphosidae) caught from the wild. *Austr. J. Mar. Freshwat. Res.*, 43:753–763.
- Dee, A.J., and J.D. Parrish. 1994. Reproductive and trophic ecology of the soldierfish *Myripristis amaena* in tropical fisheries. *Fish. Bull.*, 92:516–530.
- Delsman, H.C. 1921. Fish eggs and larvae from the Java Sea. 1. *Fistularia serrata* Cuv. *Treubia* 2(1):97–108.
- Delsman, H.C. 1929. Fish eggs and larvae of the Java Sea. 13. *Chanos chanos* Treubia 12i1-1863.
- DeMartini, E.E. 1976. The adaptive significance of territoriality and egg cannibalism in the painted greenling *Oxylebius pictus* Gill, a northeastern Pacific marine fish. Ph.D. diss., Univ. Wash.
- DeMartini, E.E. 1978a. Apparent paternal care in *Liparis fucensis* (Pisces: Cyclopteridae). *Copeia*, 1978:357–359.
- DeMartini, E.E. 1978b. Spatial aspects of reproduction in buffalo sculpin, *Enophrys bison*. *Environ. Biol. Fish.*, 3:331–336.
- DeMartini, E.E. 1985. Social behavior and coloration changes in painted greenling, *Oxylebius pictus* (Pisces, Hexagrammidae). *Copeia*, 1985:966–975.
- DeMartini, E.E. 1986. Reproductive colorations, paternal behavior and egg masses of kelp greenling, *Hexagrammos decagrammus*, and whitespotted greenling, *H. stelleri*. *Northwest Sci.*, 60:32–35.
- DeMartini, E.E. 1987. Paternal defense, cannibalism and polygamy: factors influencing the reproductive success of painted greenling (Pisces, Hexagrammidae). *Anim. Behav.*, 35:1145–1158.
- DeMartini, E.E. 1988a. Size-assortative courtship and competition in two embiotocid fishes. *Copeia*, 1988:336–344.
- DeMartini, E.E. 1988b. Spawning success of the male plainfin midshipman. I. Influences of male body size and area of spawning site. *J. Exp. Mar. Biol. Ecol.*, 121:177–192.
- DeMartini, E. E. 1990. Annual variations in fecundity, egg size and condition of the plainfin midshipman (*Porichthys notatus*). *Copeia*, 1990: 850–855.
- DeMartini, E.E. 1991. Annual variations in fecundity, egg size, and the gonadal and somatic conditions of queenfish *Seriphus politus* (Sciaenidae). *Fish. Bull.*, 89:9–18.
- DeMartini, E.E. 1997. How might recruitment research on coral-reef fishes help manage tropical reef fisheries? *Austr. J. Ecol.*, 23:305–310.
- DeMartini, E.E. 1999. Intertidal spawning. Pp. 143–164. In: Intertidal fishes: life in two worlds, M.H. Horn, K.L.M. Martin, and M. Chotkowski (eds.). Academic Press.
- DeMartini, E.E., A.M. Barnett, T.D. Johnson, and R.F. Ambrose. 1994. Growth and production estimates for biomass-dominant fishes on a southern California artificial reef. *Bull. Mar. Sci.*, 55:711–725.
- DeMartini, E.E., and B.G. Patten. 1979. Egg guarding and reproductive biology of the red Irish lord, *Hemilepidotus hemilepidotus* (Tilesius). *Syesis*, 12:41–55.
- DeMartini, E.E., and M.E. Anderson. 1980. Comparative survivorship and life history of painted greenling (*Oxylebius pictus*) in Puget Sound, Washington and Monterey Bay, California.

- Environ. Biol. Fish., 5:33–47.
- DeMartini, E.E., J.H. Uchiyama, and H.A. Williams. 2000. Sexual maturity, sex ratio, and size composition of swordfish, *Xiphias gladius*, caught by the Hawaii-based pelagic longline fishery. Fish. Bull., 98:489–506.
- Demestre, M., B. Moli, L. Recasens, and P. Sanchez. 1993. Life history and fishery of *Lepidopus caudatus* (Pisces: Trichiuridae) in the Catalan Sea (Northwestern Mediterranean). Mar. Biol., 115:23–32.
- Dempster, R.P., and E S. Herald. 1961. Notes on the hornshark, *Heterodontus francisci*, with observations on mating activities. Occ. Pap. Calif. Acad. Sci., 33:1–7.
- Denny, C.M., and D R. Schiel. 2002. Reproductive biology and population structure of the banded wrasse, *Notolabrus fucicola* (Labridae) around Kaikoura, New Zealand. N. Z. J. Mar. Freshwat. Res., 36:555–563.
- DeSilva, D.P., and P.R. Breder. 1997. Reproduction, gonad histology, and spawning cycles of North Atlantic billfishes (Istiophoridae). Bull. Mar. Sci., 60:668–697.
- DeWoody, J.A., D.E. Fletcher, S.D. Wilkins, and J.C. Avise. 2001. Genetic documentation of filial cannibalism in nature. P. Natl. Acad. Sci., 98:5090–5092.
- Diener, D.R. 1976. Hermaphroditism in fish: a comparative study of the reproductive biology and endocrinology of the California Labridae. Ph.D. diss., Univ. Calif., San Diego.
- Dipper, F A., and R.S.V. Pullin. 1979. Gonochorism and sex-inversion in British Labridae (Pisces). J. Zool. (Lond.), 187:97–111.
- Dmitrieva, T.M., P.L. Katsel, R.B. Balejev, V.A. Ostroumov, and U.P. Kozlov. 1988. The isolation of the sexual pheromone of the male yellowfin Baikal sculpin (*Cottocomephorus grewinkii*). Biol. Nauki, 39–44.
- Dominey, W.J., and L.S. Blumer. 1984. Cannibalism of early life stages in fishes. Pp. 43–64. In: Infanticide: comparative and evolutionary perspectives, G. Hausfater and S.B. Hrdy (eds.). Taylor & Francis.
- Donaldson, T.J. 1990. Lek-like courtship by males, and multiple spawnings by females of *Synodus dermatogenys* (Synodontidae). Jpn. J. Ichthyol., 37:292–301.
- Drazen, J.C., S.K. Goffredi, B. Schlining, and D.S. Stakes. 2003. Aggregations of egg-brooding deep-sea fish and cephalopods on the Gorda Escarpment: a reproductive hot spot. Biol. Bull., 205:1–7.
- Druzhinin, A.D. 1976. Notes on the ecology of *Calamus brachysomus* (Pisces, Sparidae). J. Ichthyol., 16:317–319.
- Duarte, C.M., and M. Alcaraz. 1989. To produce many small or few large eggs: a size-dependent reproductive tactic of fish. Oecologia, 80:401–404.
- Dugatkin, L.A., and G.J. FitzGerald. 1997. Sexual selection. Pp. 266–291. In: Behavioral ecology of teleost fishes, J.-G. Godin (ed.). Oxford Univ. Press.
- Durai, A.A., N. Ramanathan, and K. Balasubrahmanyam. 1988. Breeding biology of *Hyporhamphus unifasciatus* (Ranzani) from coastal waters of Parangipettai, east coast of India. Proc. First Indian Fish. Forum, December 4–8 1987, Mangalore, Karnataka.
- Dygert, P.H., and D.R. Gunderson. 1991. Energy utilization by embryos during gestation in viviparous copper rockfish. Environ. Biol. Fish., 30:165–171.
- Ebeling, A.W., and M.A. Hixon. 1991. Tropical and temperate reef fishes: comparison of community structures. Pp. 509–563. In: The ecology of fishes on coral reefs. P.F. Sale (ed.). Academic Press.
- Ebeling, A.W., and W.H. Weed. 1963. Melamphaidae III. Systematics and distribution of the

- species in the bathypelagic genus *Scopelogadus* Vaillant. Dana Rep., (60):1–58.
- Ebert, D.A. 1989. Life history of the sevengill shark, *Notorynchus cepedianus* Peron, in two northern California bays. Calif. Fish Game, 75:102–112.
- Ebert, D.A., L.V.J. Compagno, and L. J. Natanson. 1987. Biological notes on the Pacific sleeper shark, *Somniosus pacificus* (Chondrichthyes: Squalidae). Calif. Fish Game, 73:117–123.
- Ebert, E.E., and C.H. Turner. 1962. The nesting behavior, eggs and larvae of the bluespot goby. Calif. Fish Game, 48:249–255.
- Ebisawa, A. 1999. Reproductive and sexual characteristics in the Pacific yellowtail emperor, *Lethrinus atkinsoni*, in waters off the Ryukyu Islands. Ichthyol. Res. 46:341–358.
- Elgar, M.A. 1990. Evolutionary compromise between a few large and many small eggs: comparative evidence in teleost fish. Oikos, 59:283–287.
- Elgar, M.A., and B.J. Crespi (eds.) 1992. Cannibalism: ecology and evolution among diverse taxa. Oxford Univ. Press.
- Elorduy-Garay, J.F., and S. Ramirez-Luna. 1994. Gonadal development and spawning of female ocean whitefish *Caulolatilus princeps* (Pisces: Branchiostegidae) in the Bay of La Paz, B.C.S., Mexico. J. Fish Biol., 44:553–566.
- El-Sayed, A.M., and K.A. Bary. 1994. Life cycle and fecundity of rabbitfish, *Siganus canaliculatus* (Teleostei: Siganidae) in the Arabian Gulf. Oebalia, 20:79–88.
- El-Zarka, S. 1956. Breeding behavior of the Egyptian cichlid fish, *Tilapia zilli*. Copeia, 1956:112–113.
- Emlen, S.T., and L.W. Oring. 1977. Ecology, sexual selection, and the evolution of mating systems. Science, 197:215–233.
- Endler, J.A. 1991. Variation in the appearance of guppy color patterns to guppies and their predators under different visual conditions. Vision Res. 31:587–608.
- Erickson, D.L., and E. K. Pikitch. 1993. A histological description of shortspine thornyhead, *Sebastolobus alascanus*, ovaries: structures associated with the production of gelatinous egg masses. Environ. Biol. Fish., 36:273–282.
- Erisman, B. and L.G. Allen 2005. Color patterns and associated behaviors in the kelp bass, *Paralabrax clathratus* (Teleostei: Serranidae). Bull. S. Calif. Acad. Sci., 104(2):45-62.
- Erisman, B. and L.G. Allen 2006. Reproductive behavior of a temperate serranid fish, *Paralabrax clathratus* (Girard) from Santa Catalina Island, California, U.S.A., J. Fish Biol., 68:157-184.
- Erisman, B.E., J.A. Rosales-Casián, and P.A. Hastings 2008. Evidence of gonochorism in a grouper, *Mycteroperca rosacea*, from the Gulf of California, Mexico. Environ. Biol. Fish., 82:23-33.
- Erisman, B.E., M.T. Craig, and P.A. Hastings 2010. Reproductive biology of the Panama graysby *Cephalopholis panamensis* (Teleostei: Epinephelidae). J. Fish Biol., 76.6:1312-1328.
- Erisman, B.E., and Rowell, T.J., 2017. A sound worth saving: acoustic characteristics of a massive fish spawning aggregation. Biol. Lett., 13(12):20170656.
- Erisman, B.E., C.W. Petersen, P.A. Hastings, and R.R. Warner 2013. Phylogenetic perspectives on the evolution of functional hermaphroditism in teleost fishes, Integr. Comp. Biol., 53(4):736–754.
- Erisman, B.E., M.T. Craig, and P.A. Hastings 2009. A phylogenetic test of the size-advantage model: evolutionary changes in mating behavior influence the loss of sex change in a fish lineage. Amer. Nat., 174(3):E83-E99.

- Eschmeyer, W.N. (ed.) 1998. Catalog of fishes. Vols. 1–3. Spec. Publ. No. 1, Cent. Biodiv. Res. Info, Calif. Acad. Sci., San Francisco.
- Eschmeyer, W.N., E.S. Herald, and H. Hammann. 1983. A field guide to Pacific Coast fishes. Houghton Mifflin Company.
- Feeney, R.F. 1987. Development of the eggs and larvae of the yellowchin sculpin, *Icelinus quadriseriatus* (Pisces: Cottidae). Fish. Bull., 85:201–212.
- Fennessy, S.T., and Y. Sadovy. 2002. Reproductive biology of a protogynous hermaphrodite, the serranid *Epinephelus andersoni*. Mar. Freshwat. Res., 53:147–158.
- Fischer, E.A. 1980. The relationship between mating system and simultaneous hermaphroditism in the coral reef fish *Hypoplectrus nigricans* (Serranidae). Anim. Behav., 28:620–634.
- Fischer, E.A., and C.W. Petersen 1987. The evolution of sexual patterns in the seabasses. BioSci., 37:482–489.
- Fishelson, L. 1989. Bisexuality and pedogenesis in gobies (Gobiidae: Teleostei) and other fish, or, why so many little fish in tropical seas? Senckenberg. marit., 20:147–170.
- Fishelson, L., and B.S. Galil. 2001. Gonad structure and reproductive cycle in the deep-sea hermaphrodite tripodfish, *Bathypterois mediterraneus* (Chlorophthalmidae, Teleostei). Copeia, 2001:556–560.
- Fishelson, L. 1992. Comparative gonad morphology and sexuality of the Muraenidae (Pisces, Teleostei). Copeia, 1992:197–209.
- Fishelson, L. 1994. Comparative internal morphology of deep-sea eels, with particular emphasis on gonads and gut structure. J. Fish Biol., 44:75–101.
- Fitch, J.E., and R.L. Lavenberg. 1968. Deep-water fishes of California. Univ. Calif. Press.
- Fitch, J.E., and R.L. Lavenberg. 1971. Marine food and game fishes of California. Univ. Calif. Press.
- Fitch, J.E., and R.L. Lavenberg. 1975. Tidepool and nearshore fishes of California. Univ. Calif. Press.
- Fitzgerald, G.J. 1991. The role of cannibalism in the reproductive ecology of the threespine stickleback. Ethology, 89:177–194.
- Fiumera, C., B.A. Porter, G.D. Grossman, and J.C. Avise. 2002. Intensive genetic assessment of the mating system and reproductive success in a semi-closed population of the mottled sculpin, *Cottus bairdi*. Mol. Ecol., 11:2367–2377.
- Foster, S.A. 1994. Inference of evolutionary pattern: diversionary displays of three-spined sticklebacks. Behav. Ecol., 5:114–121.
- Foster, S.A. 1990. Courting disaster in cannibal territory. Nat. Hist., 11/90:52–61.
- Francis, R.C. 1992. Sexual lability in teleosts: developmental factors. Q. Rev. Biol., 67:1–18.
- Fricke, H.W. 1980. Mating systems, maternal and biparental care in triggerfish (Balistidae). Zeit. Tierpsychol., 53:105–122.
- Fricke, R., Eschmeyer, W.N., and R. Van der Laan (eds.). 2023. Eschmeyer's catalog of fishes: genera, species, references. (<http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>).
- Friedlander, A.M., and E.E. DeMartini. 2002. Contrasts in density, size, and biomass of reef fishes between the northwestern and the main Hawaiian Islands: the effects of fishing down apex predators. Mar. Ecol., Prog. Ser., 230:253–264.
- Froeschke, B., L.G. Allen, and D.J. Pondella II 2007. Life history and courtship behavior of black perch (*Embiotoca jacksoni*, Teleostomi: Embiotocidae) from southern California. Pac., Sci., 61(4):521–531.

- Fujii, T. 1971. Hermaphroditism and sex reversal in fishes of the Platycephalidae. II. *Kumococius detrusus* and *Inegocia japonica*. Jpn. J. Ichthyol., 18:109–117.
- Garcia-Cagide, A. 1986. Reproductive characteristics of the blue-striped grunt *Haemulon sciurus*, in the eastern zone of the Batabano Gulf, Cuba. Rep. Invest. Inst. Oceanol. Acad. Cienc. Cuba, (48):1–28.
- Gebhardt, M.D. 1987. Parental care: a freshwater phenomenon? Environ. Biol. Fish., 19:69–72.
- George, A., and V.G. Springer. 1980. Revision of the clinid fish tribe Ophiclinini, including five new species, and definition of the family Clinidae. Smithson. Contrib. Zool., 307. 31 pp.
- Gilbert, P.W. 1981. Patterns of shark reproduction. Oceanus, 24(4):30–39.
- Gilmore, R.G., J.W. Dodrill, and P.A. Linley. 1983. Reproduction and development of the sand tiger shark, *Odontaspis taurus* (Rafinesque). Fish. Bull., 81:201–225.
- Gingras, M.L., D.A. Ventresca, M.D. Donnellan, and J.L. Fisher. 1998. First observations of vermilion rockfish courtship are from a harvest refuge. Calif. Fish Game, 84:176–179.
- Giorgi, A.E., and J.L. Congleton. 1984. Effects of current velocity on development and survival of lingcod, *Ophiodon elongatus*, embryos. Environ. Biol. Fish., 10:15–27.
- Gladstone, W. 1987. The eggs and larvae of the sharpnose pufferfish *Canthigaster valentini* (Pisces: Tetraodontidae) are unpalatable to other reef fishes. Copeia, 1987:227–230.
- Gladstone, W. 1994. Lek-like spawning, parental care and mating periodicity of the triggerfish *Pseudobalistes flavimarginatus* (Balistidae). Environ. Biol. Fish., 39:249–257.
- Gladstone, W., 2007. Temporal patterns of spawning and hatching in a spawning aggregation of the temperate reef fish *Chromis hypsilepis* (Pomacentridae). Mar. Biol., 151:1143–1152.
- Godin, J.-J. G., and S. E. Briggs. 1996. Mate choice under predation risk in the guppy. Anim. Behav., 51:117–130.
- Godwin, J. 1995. Phylogenetic and habitat influences on mating system structure in the humbug damselfishes (*Dascyllus*, Pomacentridae). Bull. Mar. Sci., 57:637–652.
- Golani, D., and A. Diamant. 1991. Biology of the sweeper, *Pempheris vanicolensis* Cuvier & Valenciennes, a Lessepsian migrant in the eastern Mediterranean, with a comparison with the original Red Sea population. J. Fish Biol., 38:819–827.
- Goldberg, R.L., Downing, P.A., Griffin, A.S. and Green, J.P., 2020. The costs and benefits of paternal care in fish: a meta-analysis. P. R. Soc. B, 287(1935):20201759.
- Goldberg, S.R. 1981a. Seasonal spawning cycle of the California tonguefish, *Symphurus atricauda* (Cynoglossidae). Copeia, 1981:472–473.
- Goldberg, S.R. 1981b. Seasonal spawning cycle of the Pacific butterfish, *Peprilus simillimus* (Stromateidae). Fish. Bull., 78:977–978.
- Goldberg, S.R., and S. Pham. 1987. Seasonal spawning cycle of the speckled sanddab, *Citharichthys stigmaeus* (Bothidae). Bull. S. Calif. Acad. Sci., 86:164–166.
- Grant, J.W.A. 1997. Territoriality, pp. 81–103. In: Behavioral ecology of teleost fishes, J.-G. J. Godin (ed.). Oxford Univ. Press.
- Gray, G.A., and H.E. Winn. 1961. Reproductive ecology and sound production of the toadfish *Opsanus tau*. Ecology, 42:274–282.
- Greeley, M.S., Jr., D.R. Calder, and R.A. Wallace. 1987. Oocyte growth and development in the striped mullet, *Mugil cephalus*, during seasonal ovarian recrudescence: relationship to fecundity and size at maturity. Fish. Bull., 85:187–200.
- Griem, J.N., and K.L.M. Martin. 2000. Wave action: the environmental trigger for hatching in the California grunion *Leuresthes tenuis* (Teleostei: Atherinopsidae). Mar. Biol., 137:177–181.

- Griffiths, M.H. 2002. Life history of the South African snoek, *Thyrsites atun* (Pisces: Gempylidae): a pelagic predator of the Benguela ecosystem. *Fish. Bull.*, 100:690–710.
- Grimes, C.B. 1987. Reproductive biology of the Lutjanidae: a review. Pp. 239–294. In: *Tropical snappers and groupers: biology and fisheries management*. J.J. Polovina and S. Ralston (eds). Westview Press.
- Gronell, A.M. 1984. Courtship, spawning, and social organization of the pipefish, *Corythoichthys intestinalis* (Pisces: Syngnathidae) with notes on two congeneric species. *Z. Tierpsychol.*, 65:1–24.
- Gross, M.R. 1982. Sneakers, satellites and parentals: polymorphic mating strategies in North American sunfishes. *Zeit. Tierpsychol.*, 60:1–26.
- Gunn, J.S., and R.E. Thresher. 1991. Viviparity and the reproductive ecology of clinid fishes (Clinidae) from temperate Australian waters. *Environ. Biol. Fish.*, 31:323–344.
- Haedrich, R.L., and N.R. Merrett. 1988. Summary atlas of deep-living demersal fishes in the North Atlantic Basin. *J. Nat. Hist.*, 22:1325–1362.
- Hallacher, L.E. 1974. The comparative morphology of extrinsic gas bladder musculature in the scorpionfish genus *Sebastes* (Pisces: Scorpaenidae). *Proc. Calif. Acad. Sci.*, 40:59–86.
- Hallacher, L.E. 1974. The comparative morphology of extrinsic gasbladder musculature in the scorpion fish genus *Sebastes* (Pisces: Scorpaenidae). *Proc. Calif. Acad. Sci.*, Ser. 4, 40(3):59–86.
- Hamilton, W.J., and R. Poulin. 1999. Female preference and male nuptial coloration in the freshwater fish *Gobiomorphus breviceps*: geographic variation among populations. *Can. J. Zool.*, 77:463–469.
- Hann, H.W. 1930. Variations in spermiogenesis in the teleost family Cottidae. *J. Morph. Physiol.*, 50:393–411.
- Harrington, M.E. 1997. Behavior patterns and sexual dimorphism in the spotted dragonet, *Diplogrammus pauciradiatus* (Pisces: Callionymidae). *Bull. Mar. Sci.*, 60:872–893.
- Hart, J.L. 1973. Pacific Fishes of Canada. *Fish. Res. Bd. Can.*, Bull. 180:1–740.
- Hastings, P.A. 1989. Protogynous hermaphroditism in *Paralabrax maculatofasciatus* (Pisces: Serranidae). *Copeia*, 1989:184–188.
- Hastings, P.A. 1992. Nest-site size as a short-term constraint on the reproductive success of paternal fishes. *Environ. Biol. Fish.*, 34:213–218.
- Hastings, P.A., and C.W. Petersen. 1986. A novel pattern in serranid fishes: simultaneous hermaphrodites and secondary males in *Serranus fasciatus*. *Environ. Biol. Fish.*, 15:59–68.
- Hastings, P.A. and C.W. Petersen. 2010. Parental care, oviposition sites, and mating systems of blennioid fishes. Pp.91–116. In: *Reproduction and sexuality in marine fishes. Patterns and processes*. K.S. Cole (ed.). Univ. Calif. Press.
- Hawkins, A.D. 1993. Underwater sound and fish behavior. Pp. 127–168. In: T.J. Pitcher (ed.), *The behavior of teleost fishes*. Chapman and Hall.
- Hayakawa, Y., and H. Munehara. 1996. Non-copulatory spawning and female participation during early egg care in a marine sculpin *Hemilepidotus gilberti*. *Ichthyol. Res.*, 43:73–78.
- Hayakawa, Y., R. Akiyama, H. Munehara, and A. Komaru. 2002a. Dimorphic sperm influence semen distribution in a non-copulatory sculpin, *Hemilepidotus gilberti*. *Environ. Biol. Fish.*, 65:311–317.
- Hayakawa, Y., R. Akiyama, and H. Munehara. 2002b. Obstructive role of the dimorphic sperm

- in a non-copulatory marine sculpin, *Hemilepidotus gilberti*, to prevent other males' eusperm from fertilization. *Environ. Biol. Fish.*, 64:419–427.
- Healey, M.C., and A. Prince. 1998. Alternative tactics in the breeding behaviour of male coho salmon. *Behaviour*, 135:1099–1124.
- Hebets, E.A., Barron, A.B., Balakrishnan, C.N., Hauber, M.E., Mason, P.H. and Hoke, K.L., 2016. A systems approach to animal communication. *P. R. Soc. B*, 283(1826):20152889
- Helvey, M. 1982. First observations of courtship behavior in rockfish, genus *Sebastes*. *Copeia*, 1982:763–770.
- Herold, D., and E. Clark. 1993. Monogamy, spawning and skin-shedding of the sea moth, *Eurypegasus draconis* (Pisces: Pegasidae). *Environ. Biol. Fish.*, 37:219–236.
- Herring, P. J. 2000. Species abundance, sexual encounter, and bioluminescent signaling in the deep sea. *Phil. Trans. Roy. Soc. Lond B.*, 355:1273–1276.
- Hess, H.C. 1993. Male mouthbrooding in jawfishes (Opisthognathidae): constraints on polygyny. *Bull. Mar. Sci.*, 52:806–818.
- Hinckley, S. 1987. The reproductive biology of walleye pollock, *Theragra chalcogramma*, in the Bering Sea, with reference to spawning stock structure. *Fish. Bull.*, 85:481–498.
- Hixon, M.A. 1981. An experimental analysis of territoriality in the California reef fish *Embiotoca jacksoni* (Embiotocidae). *Copeia*, 1981: 653–665.
- Hixon, M.A. 1991. Predation as a process structuring coral reef fish communities. Pp. 475–508. In: *The ecology of fishes on coral reefs*. P.F. Sale (ed.). Academic Press.
- Hobson, E.S. 1994. Ecological relations in the evolution of acanthopterygian fishes in warm-temperate communities of the northeastern Pacific. *Environ. Biol. Fish.*, 40:49–90.
- Hoelzer, G. 1995. Filial cannibalism and male parental care in damselfish. *Bull. Mar. Sci.*, 57:663–671.
- Hoffman, S.G. 1983. Sex-related foraging behavior in sequentially hermaphroditic hogfishes (*Bodianus* spp.). *Ecology*, 64:798–808.
- Hoffman, S.G. 1985. Effects of size and sex on the social organization of reef-associated hogfishes, *Bodianus* spp. *Environ. Biol. Fish.*, 14:185–197.
- Hoffman, S.G., and D.R. Robertson. 1983. Foraging and reproduction of two Caribbean reef toadfishes (Batrachoididae). *Bull. Mar. Sci.*, 33:919–927.
- Hopkins, T.E., M.B. Eldridge, and J.J. Cech, Jr. 1995. Metabolic costs of viviparity in yellowtail rockfish, *Sebastes flavidus*. *Environ. Biol. Fish.*, 43:77–84.
- Horn, M.H., and L.G. Allen. 1978. A distributional analysis of California coastal marine fishes. *J. Biogeogr.*, 5:23–42.
- Hourigan, T.F. 1984. Pair bond formation and monogamy in two species of Hawaiian butterflyfishes (family Chaetodontidae). *Pac. Sci.*, 38:363.
- Hourigan, T.F. 1989. Environmental determinants of butterflyfish social systems. *Environ. Biol. Fish.*, 25:61–78.
- Hovey, T.E., and L.G. Allen. 2000. Reproductive patterns of six populations of the spotted sand bass, *Paralabrax maculatofasciatus*, from Southern and Baja California. *Copeia*, 2000:459–468.
- Hovey, C.B., L.G. Allen, and T.E. Hovey. 2002. The reproductive pattern of barred sand bass (*Paralabrax nebulifer*) from southern California. *CalCOFI Rep.*, 43:174–181.
- Hovey, T.E. 2001. First observations on spawning behavior in the giant sea bass. *Calif. Fish Game*, 87:61–66.
- Hubbs, C.L. 1917. The breeding habits of the viviparous perch, *Cymatogaster*. *Copeia*, 47:72–

- Hughes, G.W. 1986. Observations on the reproductive ecology of the crescent gunnel, *Pholis laeta*, from marine inshore waters of southern British Columbia. *Can. Field-Nat.*, 100:367–370.
- Hunter, J.R., B.J. Macewicz, and C.A. Kimbrell. 1989. Fecundity and other aspects of the reproduction of sablefish, *Anoplopoma fimbria*, in central California waters. *CalCOFI Rep.*, 30:61–72.
- Hunter, J.R., B.J. Macewicz, N.C.H. Lo, and C.A. Kimbrell. 1992. Fecundity, spawning, and maturity of female dover sole *Microstomus pacificus*, with an evaluation of assumptions and precision. *Fish. Bull.*, 90:101–128.
- Huntingford, F.A., 2020. Fish behaviour: determinants and implications for welfare. Pp. 73-110. In: *The welfare of fish*. T.S. Kristiansen, A. Fernö, M.A. Pavlidis, and H. van de Vis (eds.). Springer.
- Hyndes, G.A., F.J. Neira, and I.C. Potter. 1992. Reproductive biology and early life history of the marine teleost *Platycephalus speculator* Klunzinger (Platycephalidae) in a temperate Australian estuary. *J. Fish Biol.*, 40:859–874.
- Ibara, R.M., L.T. Penny, A.W. Ebeling, G. van Dykhuizen, and G. Cailliet. 1983. The mating call of the plainfin midshipman fish, *Porichthys notatus*. Pp. 205–212. In: *Predators and prey in fishes*. D.L.G. Noakes et al. (eds.), Junk, The Hague.
- Ichimaru, T., and A. Nakazono. 1999. Ovarian development and spawning of flying fish, *Cypselurus heterurus doederleini*, in the northwest coastal water of Kyushu. *Nippon Suisan Gakkaishi*, 65:680–688.
- Jakobsdottir, K.B., and J.V. Magnusson. 2001. Distribution and some other biological parameters of two morid species *Lepidion eques* (Gunther, 1887) and *Antimora rostrata* (Gunther, 1878) in Icelandic waters. *Fish. Res.*, 51:267–281.
- Jayawardane, P.A.A.T., and P. Dayaratne. 1998. Reproductive biology of shortnose ponyfish *Leiognathus brevirostris* (Valenciennes) from Portugal Bay in the Puttalam estuary, Sri Lanka. *Asian Fish. Sci.*, 10: 189–200.
- Johannes, R.E. 1978. Reproductive strategies of coastal marine fishes in the tropics. *Environ. Biol. Fish.*, 3:65–84.
- Johnston, C.E. 1994. Nest association in fishes: evidence for mutualism. *Behav. Ecol. Sociobiol.*, 35:379–383.
- Jones, B.C., and G.H. Geen. 1977. Reproduction and embryonic development of spiny dogfish (*Squalus acanthias*) in the Strait of Georgia, British Columbia. *J. Fish. Res. Bd. Can.*, 34:1286–1292.
- Jones, G.P. 1980. Contribution to the biology of the redbanded perch, *Ellerkeldia huntii* (Hector), with a discussion on hermaphroditism. *J. Fish Biol.* 17:197–207.
- Joung, S.-J., C.-T. Chen, E. Clark, S. Uchida, and W.Y.P. Huang. 1996. The whale shark, *Rhincodon typus*, is a live-bearer: 300 embryos found in one ‘megamamma’ supreme. *Environ. Biol. Fish.*, 46:219– 223.
- Kamio, M., Yambe, H. and Fusetani, N., 2022. Chemical cues for intraspecific chemical communication and interspecific interactions in aquatic environments: applications for fisheries and aquaculture. *Fish. Sci.*, 88(18):1-37.
- Karino, K. 1995. Male-male competition and female mate choice through courtship display in the territorial damselfish *Stegastes nigricans*. *Ethology*, 100:126–138.
- Karino, K., and T. Kuwamura. 1997. Plasticity in spawning visits of female damselfish,

- Stegastes nigricans*: effect of distance to mates. Behav. Ecol. Sociobiol., 41:55–59.
- Kasumyan, A. 2009. Acoustic signaling in fish. J. Ichthyol., 49:963–1020.
- Kawase, H. 1998. Reproductive behavior and evolution of triggerfish (Balistidae) and filefish (Monacanthidae). Jpn. J. Ichthyol., 45:1–19.
- Keene, M.J., R.H. Gibbs, Jr., and W.H. Krueger. 1987. Biology of midwater fishes of the Bermuda Ocean Acre. Family Melamphaidae, bigscales. Smithson. Contrib. Zool., (452):165–185.
- Kendall, A.W., Jr. 1981. Early life history of Eastern North Pacific fishes in relation to fisheries investigations. Wash. Sea Grant Tech. Rep. WSG 81-3.
- Kent, D.I., J.D. Fisher, and J.B. Marliave. 1997. Interspecific nesting in marine fishes: spawning of the spinynose sculpin, *Asemichthys taylori*, on the eggs of the buffalo sculpin, *Enophrys bison*. Abstr., 77th Annu. Mtng. Am. Soc. Ichthyol. Herpetol., June 26–July 2 1997, Univ. Wash.
- Knaggs, E.H. 1977. Status of the genus *Tilapia* in California's estuarine and marine waters. Cal-Neva Wildl., 1977:60–67.
- Knapp, R.A., and J.T. Kovach. 1991. Courtship as an honest indicator of male parental quality in the bicolor damselfish, *Stegastes partitus*. Behav. Ecol., 2:295–300.
- Knapp, R.A., and R.C. Sargent. 1989. Egg-mimicry as a mating strategy in the fantail darter, *Etheostoma flabellare*: females prefer males with eggs. Behav. Ecol. Sociobiol., 25:321–326.
- Knapp, R.A., J.C. Wingfield, and A.H. Bass. 1999. Steroid hormones and parental care in the plainfin midshipman fish (*Porichthys notatus*). Horm. Behav., 35:81–89.
- Kobayashi, K., and K. Suzuki. 1992. Hermaphroditism and sexual function in *Cirrhitichthys aureus* and the other Japanese hawkfishes (Cirrhitidae: Teleostei). Jpn. J. Ichthyol., 38:397–410.
- Kobayashi, K., K. Suzuki, and Y. Shiobara. 1993. Reproduction and hermaphroditism in *Parapercis snyderi* (Teleostei, Parapercidae) in Suruga Bay, central Japan. J. Fac. Mar. Sci. Tech., Tokai Univ., 35:149–168.
- Kodric-Brown, A. 1985. Female preference and sexual selection for male coloration in the guppy (*Poecilia reticulata*). Behav. Ecol. Sociobiol., 17:199–205.
- Kohda, M. 1988. Diurnal periodicity of spawning activity of permanently territorial damselfishes (Teleostei: Pomacentridae). Environ. Biol. Fish., 21:91–100.
- Kokita, T., and A. Nakazono. 2001. Sexual conflict over mating system: the case of a pair-territorial filefish without parental care. Anim. Behav., 62:147–155.
- Kosaka, S. 2000. Life history of the Pacific saury *Cololabis saira* in the northwest Pacific and considerations on resource fluctuations based on it. Bull. Tohoku Natl. Fish. Res. Inst., 63:1–96.
- Koya, Y., H. Munehara, and K. Takano. 2002. Sperm storage and motility in the ovary of the marine sculpin *Alcichthys alcicornis* (Teleostei: Scorpaeniformes), with internal gametic association. J. Exp. Zool., 292:145–155.
- Koya, Y., T. Matsubara, T. Ikeuchi, N. Okubo, S. Adachi, and K. Yamauchi. 1995. Reproductive cycle and embryonic growth during gestation of the viviparous teleost, *Zoarcetes elongatus*. Proc. Fifth Internat. Symp. Repro. Physiol. Fish, Univ. Texas.
- Kraak, S.B.M. 1996. Female preference and filial cannibalism in *Aidablennius sphinx* (Teleostei, Blenniidae); a combined field and laboratory study. Behav. Proc., 36:85–98.
- Kraak, S.B.M., and E.P. van den Berghe. 1992. Do females assess paternal quality by means of

- test eggs? Anim. Behav., 43:865–867.
- Kume, G., A. Yamaguchi, and I. Aoki. 2002. Dummy egg production by female cardinalfish to deceive cannibalistic males: oogenesis without vitellogenesis. Environ. Biol. Fish., 65:469–472.
- Kume, G., A. Yamaguchi, and T. Taniuchi. 2000. Filial cannibalism in the paternal mouthbrooding cardinalfish *Apogon lineatus*: egg production by the female as the nutritional source for the mouthbrooding male. Environ. Biol. Fish., 58:233–236.
- Kusen, J.D., K. Nakagawa, Y. Yogo, and A. Nakazono. 1991. Protogynous hermaphroditism in the sand diver *Trichonotus filamentosus*. Bull. Jpn. Soc. Sci. Fish., 57:35–40.
- Kusher, D.I., S.E. Smith, and G.M. Cailliet. 1992. Validated age and growth of the leopard shark, *Triakis semifasciata*, with comments on reproduction. Environ. Biol. Fish., 35:187–203.
- Kuwamura, T., Y. Nakashima, and Y. Yogo. 1994. Sex change in either direction by growth-rate advantage in the monogamous coral goby, *Paragobiodon echinocephalus*. Behav. Ecol., 5:434–438.
- Kuwamura, T., Suzuki, S. and Kadota, T., 2016. Interspecific variation in the spawning time of labrid fish on a fringing reef at Iriomote Island, Okinawa. Ichthyological research, 63: 460-469.
- Kuwamura, T., Sunobe, T., Sakai, Y., Kadota, T. and Sawada, K., 2020. Hermaphroditism in fishes: an annotated list of species, phylogeny, and mating system. Ichth. Res., 67:341-360.
- Lamb, A., and P. Edgell. 1986. Coastal fishes of the Pacific Northwest. Harbour Publishing Co.
- Langston, R. 2003. Gonad morphology and sex allocation in sandburrowers (family Creediidae). Ph.D. diss., University of Hawaii, Manoa.
- Larson, R.J. 1991. Seasonal cycles of reserves in relation to reproduction in Sebastes. Environ. Biol. Fish., 30:57–70.
- Lau, P.P.F., and Y. Sadovy. 2001. Gonad structure and sexual pattern in two threadfin breams and possible function of the dorsal accessory duct. J. Fish Biol., 58:1438–1453.
- Lauth, R.R. 1989. Seasonal spawning cycle, spawning frequency, and batch fecundity of the cabezon, *Scorpaenichthys marmoratus*, in Puget Sound, Washington. Fish. Bull., 87:145–154.
- Lavenda, N. 1949. Sexual differences and normal protogynous hermaphroditism in the Atlantic sea bass, *Centropomus striatus*. Copeia, 1949:185–194.
- Lea, R.N., and R.H. Rosenblatt. 2000. Observations on fishes associated with the 1997–98 El Nino off California. CalCOFI Rep., 41:117–127.
- Lehodey, P., R. Grandperrin, and P. Marchal. 1997. Reproductive biology and ecology of a deep-demersal fish, alfonsino *Beryx splendens*, over the seamounts off New Caledonia. Mar. Biol., 128:17–27.
- Leis, J.M., and J.T. Moyer. 1985. Development of eggs, larvae and pelagic juveniles of three Indo-Pacific ostraciid fishes (Tetraodontiformes): *Ostracion meleagris*, *Lactoria fornasini* and *L. diaphana*. Jpn. J. Ichthyol., 32:189–202.
- Leis, J. M., and M. I. McCormick. 2002. The biology, behavior and ecology of the pelagic, larval stage of coral reef fishes, pp. 171–199. In: P. A. Sale (ed.), Coral reef fishes: dynamics and diversity in a complex ecosystem. Academic Press.
- Levings, C.D. 1969. The zoarcid *Lycodopsis pacificus* in outer Burrard Inlet, British Columbia. J. Fish. Res. Bd. Can., 26:2403–2412.

- Li, K., Buchinger, T.J. and Li, W., 2018. Discovery and characterization of natural products that act as pheromones in fish. *Nat. Prod, Rept*, 35(6):501-513.
- Li, W., A.P. Scott, M J. Siefkes, H. Yan, Q. Liu, and S.S. Yun. 2002. Bile acid secreted by male sea lamprey that acts as a sex pheromone. *Science*, 296:138–141.
- Lindstrom, K. 2000. The evolution of filial cannibalism and female mate choice strategies as resolutions to sexual conflict in fishes. *Evolution*, 54:617–627.
- Lloyd, J.E. 1977. Bioluminescence and communication, pp. 164–183. In: *How animals communicate*. T.A. Sebeok (ed.). Indiana Univ. Press.
- Lobel, P.S. 1992. Sounds produced by spawning fishes. *Environ. Biol. Fish.*, 33:351–358.
- Lobel, P.S., and D.A. Mann. 1995. Spawning sounds of the damselfish, *Dascyllus albisella* (Pomacentridae) and relationship to male size. *Bioacoustics*, 6:187–198.
- Lobel, P.S., 2011. A review of the Caribbean hamlets (Serranidae, *Hypoplectrus*) with description of two new species. *Zootaxa*, 3096(1):1-17.
- Loiselle, P.V. 1977. Colonial breeding by an African substratum spawning cichlid fish, *Tilapia zillii* (Gervais). *Biol. Behav.*, 2:129–142.
- Losey, G S., Jr. 1969. Sexual pheromone in some fishes of the genus *Hypsoblennius* Gill. *Science*, 163:181–183.
- Losey, G.S., Jr. 1976. The significance of coloration in fishes of the genus *Hypsoblennius* Gill. *Bull. S. Cal. Acad. Sci.*, 75:183–198.
- Losey, G.S., T.W. Cronin, T.H. Goldsmith, D. Hyde, N J. Marshall, and W.N. McFarland. 1999. The UV visual world of fishes: a review. *J. Fish Biol.*, 54:921–943.
- Lott, J.L. 1995. Nesting patterns and nesting success of male Panamic sergeant majors, *Abudefduf troschelii*, from the Gulf of California. *Bull. Mar. Sci.* 57:705.
- Love, R.M., P. Morris, M. McCrae, and R. Collins. 1990. Life history aspects of 19 rockfish species (Scorpaenidae: *Sebastes*) from the Southern California Bight. NOAA Tech. Rep. NMFS 87.
- Love, M.S. and J.K. Passarelli (eds.). 2020. Miller and Lea's guide to the coastal marine fishes of California (Vol. 3556). UCANR Publications.
- Lowerre-Barbieri, S.K., Ganas, K., Saborido-Rey, F., Murua, H. and Hunter, J.R., 2011. Reproductive timing in marine fishes: variability, temporal scales, and methods. *Mar. Coast. Fish.*, 3(1):71-91.
- Lugli, M., G. Pavan, P. Toricelli, and L. Bobbio. 1995. Spawning vocalizations in male freshwater gobiids (Pisces, Gobiidae). *Environ. Biol. Fish.*, 43:219–231.
- Lyle, J.M., and D.C. Smith. 1997. Abundance and biology of warty oreo (*Allocyttus verrucosus*) and spiky oreo (*Neocyttus rhomboidalis*) (Oreosomatidae) off south-eastern Australia. *Mar. Freshwat. Res.*, 48: 91–102.
- Macewicz, B.J., and J.R. Hunter. 1993. Spawning frequency and batch fecundity of jack mackerel, *Trachurus symmetricus*, off California during 1991. *CalCOFI Rep.*, 34:112–121.
- MacFarlane, R.B., and M J. Bowers. 1995. Matrotrophic viviparity in the yellowtail rockfish *Sebastes flavidus*. *J. Exp. Biol.*, 198:1197–1206.
- MacFarlane, R.B., E.C. Norton, and M.J. Bowers. 1993. Lipid dynamics in relation to the annual reproductive cycle in yellowtail rockfish (*Sebastes flavidus*). *Can. J. Fish. Aquat. Sci.*, 50:391–401.
- MacGinitie, G.E. 1939. The natural history of the blind goby, *Typhlogobius californiensis* Steindachner. *Am. Midl. Nat.*, 21:489–505.

- Magnuson, J. J., and J. H. Prescott. 1966. Courtship, locomotion, feeding, and miscellaneous behavior of Pacific bonito (*Sarda chiliensis*). *Anim. Behav.* 14:54–67.
- Manica, A. 2002. Filial cannibalism in teleost fish. *Biol. Rev.* 77:261–277.
- Markevich, A.I., 2020. Courtship role reversal in sevenspine goby, *Gymnogobius heptacanthus* (Gobiidae). *J. Ichth.*, 60:653–659.
- Marliave, J.B. 1975. The behavioral transformation from the planktonic larval stage of some marine fishes reared in the laboratory. Ph.D. diss., Univ. British Columbia.
- Marliave, J.B. 1976. A theory of storm-induced drift dispersal of the gasterosteid fish *Aulorhynchus flavidus*. *Copeia*, 1976:794–796.
- Marliave, J. B. 1981a. Vertical migrations and larval settlement in *Gilbertidia sigalutes*, F. Cottidae. *Rapp. Proc.-verb. Reun. Cons. int. Explor. Mer* 178:349–351.
- Marliave, J.B. 1981b. High intertidal spawning under rockweed, *Fucus distichus*, by the sharpnose sculpin, *Clinocottus acuticeps*. *Can. J. Zool.*, 59:1122–1125.
- Marliave, J.B. 1981c. Spawn and larvae of the Pacific sandfish, *Trichodon trichodon*. *Fish. Bull.*, 78:959–964.
- Marliave, J.B. 1986. Lack of planktonic dispersal of rocky intertidal fish larvae. *Trans. Am. Fish. Soc.*, 115:149–154.
- Marliave, J.B. 1987. The life history and captive reproduction of the wolf-eel *Anarrhichthys ocellatus* at the Vancouver Public Aquarium. *Internat. Zoo Ybk.*, 26:70–81.
- Marliave, J.B., and E.E. DeMartini. 1977. Parental behaviour of intertidal fishes of the stichaeid genus *Xiphister*. *Can. J. Zool.*, 55:60–63.
- Marliave, J.B., S.K. Todd, and A.W.A. Baker. 1985. Larvae of the manacled sculpin, *Synchirus gilli*, F. Cottidae. Pp. 49–54. In: Descriptions of early life history stages of selected fishes. A.W. Kendall, Jr., and J.B. Marliave (eds.). 3rd Internat. Symp. Early Life Hist. Stages Fish. and 8th Ann. Larval Fish Conf., May 1984, Univ. British Columbia. *Can. Tech. Rep., Fish. Aquat. Sci.* (1359).
- Martin, K.L.M., C.L. Moravek, and A.J Walker 2011. Waiting for a sign: extended incubation postpones larval stage in the beach spawning California Grunion *Leuresthes tenuis* (Ayres). *Environ. Biol. Fish.*, 91, 63–70.
- Martin, L.K., and G.M. Cailliet. 1988. Aspects of the reproduction of the bat ray, *Myliobatis californica*, in Central California. *Copeia*, 1988:754–762.
- Martinez-Pechero, R., E. Matus-Nivon, R. Ramirez-Sevilla, D.E. Hernadez-Ceballos, and M. Contreras-Olguin. 1990. Egg, larva and juvenile of the spadefish *Chaetodipterus zonatus* (Girard) (Pisces: Ephippidae). *Rev. Biol. Trop.*, 38:71–78.
- Matarese, A.C., A.W. Kendall, Jr., D.M. Blood, and B.M. Vinter. 1989. Laboratory guide to early life history stages of northeast Pacific fishes. NOAA Tech. Mem. NOAA-TR-NMFS-80.
- Matsumoto, Y., A. Tawa, and T. Takegaki, T., 2011. Female mate choice in a paternal brooding blenny: the process and benefits of mating with males tending young eggs. *Ethology*, 117(3):227–235.
- Matthews, L.H. 1950. Reproduction in the basking shark *Cetorhinus maximus* (Gunner). *Phil. Trans. Lond., Ser. B, Biol. Sci.*, 234(612):247–316.
- McAlary, F.A., and W.N. McFarland. 1993. The effect of light and darkness on hatching in the pomacentrid *Abudefduf saxatilis*. *Environ. Biol. Fish.*, 37:237–244.
- McBride, R.S., and K.W. Able. 1994. Reproductive seasonality, distribution and abundance of *Prionotus carolinus* and *P. evolans* (Pisces: Triglidae) in the New York Bight. *Est. Coast.*

- Shelf Sci., 38:173–188.
- McCormick, M.I. 1989. Reproductive ecology of the temperate reef fish *Cheilodactylus spectabilis* (Pisces: Cheilodactylidae). Mar. Ecol. Prog. Ser., 55:113–120.
- McFarland, W.N., and E.R. Loew. 1994. Ultraviolet visual pigments in marine fishes of the family Pomacentridae. Vision Res., 34:1393–1396.
- McFarlane, G.A., and M.W. Saunders. 1997. Fecundity of Pacific hake (*Merluccius productus*) for three stocks off the west coast of North America. CalCOFI Rep., 38:114–119.
- McGowan, J.A., D.B. Chelton, and A. Conversi. 1996. Plankton patterns, climate and change in the California Current. CalCOFI Rep., 37:45–68.
- McPhee, M.V., and T.P. Quinn. 1998. Factors affecting the duration of nest defense and reproductive lifespan of female sockeye salmon, *Oncorhynchus nerka*. Environ. Biol. Fish., 51:369–375.
- Mead, G.W. 1960. Hermaphroditism in archibenthic and pelagic fishes of the order Iniomi. Deep-Sea Res., 6:234–235.
- Mead, G.W., E. Bertelsen, and D.M. Cohen. 1964. Reproduction among deep-sea fishes. Deep-Sea Res., 11:569–596.
- Merrett, N.R., J. Badcock, and P.J. Herring. 1973. The status of *Benthalbella infans* (Pisces: Myctophoridae), its development, general biology and distribution in the eastern North Sea. J. Zool. (Lond.), 170:1–48.
- Michael, J.H., Jr. 1984. Additional notes on the repeat spawning by Pacific lamprey. Calif. Fish Game, 70:186–188.
- Middaugh, D.P., M.J. Hemmer, and D.E. Penttila. 1987. Embryo ecology of the Pacific surf smelt, *Hypomesus pretiosus* (Pisces: Osmeridae). Pac. Sci., 41:44–53.
- Milinski, M., and T.C.M. Bakker. 1990. Female sticklebacks use male coloration in mate choice and hence avoid parasitized males. Nature, 344:330–333.
- Miller, D.J., and R.N. Lea. 1972. Marine fishes of California. Calif. Dep. Fish Game, Fish Bull. (157):1–249.
- Miller, E.F. and L.G. Allen 2006. Observations on the mating behavior of captive spotted sand bass (*Paralabrax maculatofasciatus*). Bull. S. Calif. Acad. Sci., 105(1):17–29.
- Miller, P.J. 1984. The tokology of gobiid fishes. Pp. 119–153. In: Fish reproduction: strategies and tactics. G.W. Potts, and R.W. Wootton (eds.). Academic Press.
- Miya, M. 1995. Some aspects of the biology of *Bathylagus ochotensis* (Pisces: Bathylagidae) in Sagami Bay, Central Japan. Bull. Mar. Sci., 56:173–184.
- Miya, M., and T. Nemoto. 1991. Comparative life histories of the mesoand bathypelagic fishes of the genus *Cyclothone* (Pisces: Gonostomatidae) in Sagami Bay, central Japan. Deep-Sea Res., 38(1A):67–89.
- Mohler, M. 1984. Aspects of sexual selection, female fecundity and functions of male-sound on females of the bicolor damselfish, *Pomacentrus partitus*. Ph.D. diss., University of Basel.
- Mollet, H.F., G. Cliff, H.L. Pratt, Jr., and J.D. Stevens. 2000. Reproductive biology of the female shortfin mako, *Isurus oxyrinchus* Rafinesque, 1810, with comments on the embryonic development of lamnoids. Fish. Bull., 98:299–318.
- Monaco, C.J., D.J. Booth, W.F. Figueira, et al. 2021. Natural and anthropogenic climate variability shape assemblages of range-extending coral-reef fishes. J. Biogeogr., 48:1063–1075.
- Montero, D., V. Rico, and J.A. Gonzalez. 1995. Presence of *Regalecus glesne* Ascanius, 1772 (Osteichthyes, Regalecidae) in Canary Island waters. Bol. Inst. Espan. Oceanogr.,

- Morota, A., and K. Fujita. 1995. Interrelationships of echeneids and their hosts, and the reproductive habits of *Remora osteochir* in Hawaiian waters. *Jpn. J. Ichthyol.*, 42:203–207.
- Morris, M.R., M. Mussel, and M.J. Ryan. 1995. Vertical bars on male *Xiphophorus multilineatus*: a signal that deters rival males and attracts females. *Behav. Ecol.*, 6:274–279.
- Moser, H.G. 1967. Reproduction and development of *Sebastes paucispinis* and comparison with other rockfishes off Southern California. *Copeia*, 1967:773–797.
- Moser, H.G., R.L. Charter, W. Watson, D.A. Ambrose, J.L. Butler, S. H. Charter, and E.M. Sandknop. 2000. Abundance and distribution of rockfish (*Sebastes*) larvae in the Southern California Bight in relation to environmental conditions and fishery exploitation. *CalCOFI Rep.*, 41:132–147.
- Moyer, J.T. 1979. Mating strategies and reproductive behavior of ostraciid fishes at Miyake-jima, Japan. *Jpn. J. Ichthyol.*, 26:148–160.
- Moyer, J.T., and L.J. Bell. 1976. Reproductive behavior of the anemonefish *Amphiprion clarkii* at Miyake-jima, Japan. *Jpn. J. Ichthyol.*, 23:23–32.
- Moyer, J.T., and A. Nakazono. 1978. Protandrous hermaphroditism in six species of the anemonefish genus *Amphiprion* in Japan. *Jpn. J. Ichthyol.*, 25:101–106.
- Munday, P.L. 2002. Bi-directional sex change: testing the growth-rate advantage model. *Behav. Ecol. Sociobiol.*, 52:247–254.
- Munday, P.L., M.J. Caley, and G.P. Jones. 1998. Bi-directional sex change in a coral-dwelling goby. *Behav. Ecol. Sociobiol.*, 43:371–377.
- Munday, P.L., S.J. Pierce, G.P. Jones, and H.K. Larson. 2002. Habitat use, social organization and reproductive biology of the seawhip goby, *Bryaninops yongei*. *Mar. Freshwat. Res.*, 53:769–775.
- Munehara, H. 1988. Spawning and subsequent copulating behavior of the elkhorn sculpin *Alcichthys alcicornis* in an aquarium. *Jpn. J. Ichthyol.*, 35:358–364.
- Munehara, H. 1991. Utilization and ecological benefits of a sponge as a spawning bed by the little dragon sculpin, *Blepsias cirrhosus*. *Jpn. J. Ichthyol.*, 38:179–184.
- Munehara, H. 1996. Sperm transfer during copulation in the marine sculpin *Hemitripterus villosus* (Pisces, Scorpaeniformes) by means of a retractable genital duct and ovarian secretion in females. *Copeia*, 1996:452–454.
- Munehara, H. 1997. The reproductive biology and early life stages of *Podothecus sachi* (Pisces: Agonidae). *Fish. Bull.*, 95:612–619.
- Munehara, H., A. Takenaka, and O. Takenaka. 1994. Alloparental care in the marine sculpin *Alcichthys alcicornis* (Pisces: Cottidae): copulating in conjunction with paternal care. *J. Ethol.*, 12:115–120.
- Munehara, H., and K. Shimazaki. 1991. Embryonic development and newly hatched larva of the little dragon sculpin *Blepsias cirrhosus*. *Jpn. J. Ichthyol.*, 38:31–34.
- Munehara, H., and O. Takenaka. 2000. Microsatellite markers and multiple paternity in a paternal care fish, *Hexagrammos otakii*. *Jpn. J. Ichthyol.*, 18:101–104.
- Munehara, H., and T. Miura. 1995. Non-intentional filial egg cannibalism by the guarding male of *Hexagrammos otakii* (Pisces: Hexagrammidae). *J. Ethol.*, 13:191–193.
- Munehara, H., H. Okamoto, and K. Shimizaki. 1990. Paternity estimated by isozyme variation in the marine sculpin *Alcichthys alcicornis* (Pisces: Cottidae) exhibiting copulation and

- paternal care. J. Ethol. 8:21–24.
- Munehara, H., K. Takano, and Y. Koya. 1989. Internal gametic association and external fertilization in the elkhorn sculpin, *Alcichthys alcicornis*. Copeia, 1989:673–678.
- Munehara, H., K. Takano, and Y. Koya. 1991. The little dragon sculpin *Blepsias cirrhosus*, another case of internal gametic association and external fertilization. Jpn. J. Ichthyol., 37:391–397.
- Munehara, H., N. Satoh, and S. Watanabe. 1999. The reproductive biology of grunt sculpin, *Rhamphocottus richardsoni*. I.O.P. Diving News, 10(9):1–3.
- Munehara, H., V.G. Sideleva, and A. Goto. 2002. Mixed-species brooding between two Baikal sculpins: field evidence for intra and interspecific competition for reproductive resources. J. Fish Biol., 60:981–988.
- Munehara, H., Z. Kanamoto, and T. Miura. 2000. Spawning behavior and interspecific breeding in three Japanese greenlings (Hexagrammidae). Ichthyol. Res., 47:287–292.
- Munehara, H. 1999. Evolution of copulating behaviors in cottoid fishes. Pp. 163–180. In: Natural history of fishes, K. Matsuura and M. Miya (eds.). Hokkaido University Press.
- Murphy, C.A., and N.E. Stacey. 2002. Methyl testosterone induces male typical behavioral responses to putative steroidal pheromones in female round gobies (*Neogobius melanostomus*). Horm. Behav., 42: 109–115.
- Murphy, C.A., N.E. Stacey, and L.D. Corkum. 2001. Putative steroidal pheromones in the round goby, *Neogobius melanostomus*: olfactory and behavioral responses. J. Chem. Ecol., 27:443–470.
- Myers, R.F. 1999. Micronesian reef fishes: a comprehensive guide to the coral reef fishes of Micronesia. 3d ed. Coral Graphics.
- Myrberg, A.A., Jr. 1972. Ethology of the bicolor damselfish, *Eupomacentrus partitus* (Pisces: Pomacentridae): A comparative analysis of laboratory and field behavior. Anim. Behav. Monogr., 5:199–283.
- Myrberg, A.A., Jr., and J.Y. Spires. 1972. Sound discrimination by the bicolor damselfish *Pomacentrus partitus*. J. Exp. Biol., 57:727–735.
- Myrberg, A.A., Jr., and L.A. Fuiman. 2002. The sensory world of coral reef fishes. Pp. 123–148. In: Coral reef fishes: dynamics and diversity in a complex ecosystem. P.F. Sale (ed.), Academic Press.
- Myrberg, A.A., Jr., and R.J. Riggio. 1985. Acoustically mediated individual recognition by a coral reef fish (*Pomacentrus partitus*). Anim. Behav., 33: 411–416.
- Myrberg, A.A., Jr., E. Spanier, and S.J. Ha. 1978. Temporal patterning in acoustical communication. Pp. 133–179. In: Contrasts in behavior. E.S. Reese, and F.J. Lighter (eds.), Wiley-Interscience.
- Myrberg, A.A., Jr., M. Mohler, and J.D. Catala. 1986. Sound production by males of a coral reef fish (*Pomacentrus partitus*): its significance to females. Anim. Behav., 34:913–923.
- Myrberg, A.A., Jr., S.J. Ha, and M.J. Shablott. 1993. The sounds of bicolor damselfish (*Pomacentrus partitus*), predictors of body size and a spectral basis for individual recognition and assessment. J. Acoust. Soc. Amer., 94:3067–3070.
- Myrberg, A.A., Jr., W.L. Montgomery, and L. Fishelson. 1988. The reproductive biology of *Acanthurus nigrofusus* (Forsk.) and other surgeonfishes (Fam. Acanthuridae) off Eilat, Israel (Gulf of Aqaba, Red Sea). Ethology, 79:31–61.
- Nakano, H. 1994. Age, reproduction and migration of blue shark in the North Pacific Ocean. Bull. Natl. Res. Inst. Far Seas Fish., 31:141–256.

- Nakashima, Y., T. Kuwamura, and Y. Yogo. 1995. Why be a both-ways sex changer? *Ethology*, 101:301–307.
- Nakashima, Y., T. Kuwamura, and Y. Yogo. 1996. Both-ways sex change in monogamous coral gobies, *Gobiodon* spp. *Environ. Biol. Fish.*, 46:281–288.
- Nakazono, A., and H. Kawase. 1993. Spawning and biparental egg-care in a temperate filefish, *Paramonacanthus japonicus* (Monacanthidae). *Environ. Biol. Fish.*, 37:245–256.
- Natanson, L.J., and G.M. Cailliet. 1986. Reproduction and development of the Pacific angel shark, *Squatina californica*, off Santa Barbara, California. *Copeia*, 1986:987–994.
- Neer, J.E., and G.M. Cailliet. 2001. Aspects of the life history of the Pacific electric ray, *Torpedo californica* (Ayres). *Copeia*, 2001:842–847.
- Nelson, J.S., T.C. Grande, and M.V.H. Wilson. 2016. *Fishes of the World*. 5th Edition. John Wiley and Sons.
- Nishikawa, Y. 1987. Larval morphology and occurrence of the louvar, *Luvarus imperialis* (Luvaridae). *Jpn. J. Ichthyol.*, 34:215–221.
- Oda, D.L., R.J. Lavenberg, and J.M. Rounds. 1993. Reproductive biology of three California species of *Paralabrax* (Pisces: Serranidae). *CalCOFI Rep.*, 34:122–132.
- Oyama, T., Sonoyama, T., Kasai, M., Sakai, Y. and Sunobe, T., 2023. Bidirectional sex change and plasticity of gonadal phases in the goby *Lubricogobius exiguus*. *J. Fish Biol.*, 102(5):1079-1087.
- Okuyama, M. 1990. Contrast in reproductive style between two species of sandfishes (family Trichodontidae). *Fish. Bull.*, 88:543–549.
- Oliveira, R.F., V.C. Almada, E.J. Goncalves, E. Forsgren, and A.V.M. Canario. 2001. Androgen levels and social interactions in breeding males of the peacock blenny. *J. Fish Biol.*, 58:897–908.
- Olney, J.E., and A. Naplin. 1980. Eggs of the scalloped ribbonfish, *Zu cristatus* (Pisces: Trachipteridae) in the western North Atlantic. *Copeia*, 1980:165–166.
- Orton, G.L. 1955. Early developmental stages of the California scorpionfish, *Scorpaena guttata*. *Copeia*, 1955:210–214.
- Oxenford, H.A. 1999. Biology of the dolphinfish (*Coryphaena hippurus*) in the western Central Atlantic: a review. *Sci. Mar.*, 63:277–301.
- Paijmans, K.C., D.J. Booth, and M.Y. Wong. 2022. Single-species subgroups form within mixed-species shoals of tropical and temperate fishes. *Environ. Biol. Fish.*, 105:1975–1988.
- Parin, N.V., Y.P. Pavlov, and D.P. Andrianov. 1988. Ecology of the mirror dory, *Zenopsis nebulosus*, of the submarine Nasca Ridge. *J. Ichthyol.*, 28:106–115.
- Parrish, J.D. 1990. Fish communities of interacting shallow-water habitats in tropical oceanic regions. *Mar. Ecol., Prog. Ser.* 58:143–160.
- Parrish, R.H., C.S. Nelson, and A. Bakun. 1981. Transport mechanisms and reproductive success of fishes in the California Current. *Biol. Oceanogr.*, 1:175–203.
- Parrish, R.H., D.L. Mallicoate, and R.A. Klingbeil. 1986. Age dependent fecundity, number of spawnings per year, sex ratio, and maturation stages in northern anchovy, *Engraulis mordax*. *Fish. Bull.*, 84:503–517.
- Passos, C., B. Tassino, G.G. Rosenthal, and M. Reichard. 2015. Reproductive behavior and sexual selection in annual fishes. Pp. 207–230. In: *Annual fishes: life history strategy, diversity, and evolution*. N. Berois, G. Garcia and R.O. de Sá (eds.). CRC Press.
- Patzner, R.A. 1998. Gonads and reproduction in hagfishes. Pp. 378–395. In: *The biology of*

- hagfishes J.M. Jorgensen, J.P. Lomholt, R.E. Weber, and H. Malte (eds.). Chapman and Hall.
- Pauly, D., and R.S.V. Pullin. 1988. Hatching time in spherical, pelagic, marine fish eggs in response to temperature and egg size. *Environ. Biol. Fish.*, 22:261–271.
- Pawson, M.G., and G.D. Pickett. 1996. The annual pattern of condition and maturity in bass, *Dicentrarchus labrax*, in waters around England and Wales. *J. Mar. Biol. Assoc. UK*, 76:107–125.
- Peden, A.E. 1978. A systematic revision of the hemilepidotina fishes (Cottidae). *Syesis*, 11:11–49.
- Penttila, D. 1997. Investigations of intertidal spawning habitats of surf smelt and Pacific sand lance in Puget Sound, Washington. Pp. 395–407. In: forage fishes in marine ecosystems, proc. internat. symp. on role forage fish. mar. ecosyst., AK Sea Grant Coll. Progr. Rep. No. 97-01. Univ. Alaska, Fairbanks.
- Pepin, P. 1991. Effect of temperature and size on development, mortality, and survival rates of the pelagic early life history stages of marine fish. *Can. J. Fish. Aquat. Sci.*, 48:503–518.
- Pereira, L.S., Agostinho, A.A. and Winemiller, K.O. 2017. Revisiting cannibalism in fishes. *Rev. Fish Biol. Fish.*, 27:499–513.
- Peres, M.B., and S. Klippel. 2003. Reproductive biology of southwestern Atlantic wreckfish, *Polyprion americanus* (teleostei: Polyprionidae). *Environ. Biol. Fish.*, 68:163–173.
- Perrone, M., and T.M. Zaret. 1979. Parental care patterns of fishes. *Am. Nat.*, 113:351–361.
- Petersen, C.W. 1988. Male mating success, sexual size dimorphism, and site fidelity in two species of *Malacoctenus* (Labrisomidae). *Environ. Biol. Fish.*, 21:173–183.
- Petersen, C.W. 1989. Females prefer mating males in the carmine triplefin, *Axoclinus carminalis*, a paternal brood-guarder. *Environ. Biol. Fish.*, 26:213–221.
- Petersen, C.W. 1990a. The relationships among population density, individual size, mating tactics, and reproductive success in a hermaphroditic fish, *Serranus fasciatus*. *Behaviour*, 113:57–80.
- Petersen, C.W. 1990b. Variation in reproductive success and gonadal allocation in the simultaneous hermaphrodite, *Serranus fasciatus*. *Oecologia*, 83: 62–67.
- Petersen, C.W. 1995. Reproductive behaviour, egg trading, and correlates of male mating success in the simultaneous hermaphrodite, *Serranus tabacarius*. *Environ. Biol. Fish.*, 43:351–361.
- Petersen, C.W., and R.R. Warner. 1998. Sperm competition in fishes. Pp. 435–463. In: Sperm competition and sexual selection. T. Birkhead and A. Moller (eds.). Academic Press.
- Petersen, C.W., and R.R. Warner. 2002. The ecological context of reproductive behavior. Pp. 103–118. In: Coral reef fishes: dynamics and diversity of a complex ecosystem, P.F. Sale (ed.). Academic Press.
- Petersen, C.W., R.R. Warner., D.Y. Shapiro, and A. Marconato. 2001. Components of fertilization success in the bluehead wrasse, *Thalassoma bifasciatum*. *Behav. Ecol.*, 12:237–245.
- Petersen, C.W., C. Mazzoldi, K.A. Zarrella, and R. Hale. 2005. Fertilization mode, sperm characteristics, mate choice, and parental care patterns in *Artedius* spp. (Cottidae). *J. Fish Biol.*, 67:239–254.
- Petersen, C.W., K.A. Zarrella, C.A. Ruben, and C. Mazzoldi. 2004. Reproductive biology of the rosyslip sculpin, an intertidal spawner. *J. Fish. Biol.*, 64:863–875.
- Petersen, C.W., Mazzoldi, C., Zarrella, K.A. and Hale, R.E., 2005. Fertilization mode, sperm

- characteristics, mate choice and parental care patterns in *Artedius* spp. (Cottidae). J. Fish Biol., 67(1):239-254.
- Petersen, C.W., Zarrella, K.A., Ruben, C.A. and Mazzoldi, C., 2004. Reproductive biology of the rosy lip sculpin, an intertidal spawner. J. Fish Biol., 64(4):863-875.
- Pietsch, T.W. 1976. Dimorphism, parasitism and sex: reproductive strategies among deep-sea ceratioid anglerfishes. Copeia, 1976:781-793.
- Pietsch, T.W., and D.B. Grobecker. 1987. Frogfishes of the world: systematics, zoogeography, and behavioral ecology. Stanford Univ. Press.
- Pollock, B.R. 1981. Age determination and growth of the luderick, *Girella tricuspidata* (Quoy and Gaimard), taken from Moreton Bay, Australia. J. Fish Biol. 19:475-485.
- Pondella, D.J., II, L.G. Allen, J.A. Rosales Casian, and T.E. Hovey. 2001. Demographic parameters of golden spotted rock bass *Paralabrax auroguttatus* from the northern Gulf of California. Trans. Am. Fish. Soc., 130:686-691.
- Pondella, D.J., II, M.T. Craig and J. Franck. 2003. The phylogeny of *Paralabrax* (Perciformes: Serranidae) and allied taxa inferred from 16S and 12S mitochondrial ribosomal sequences. Mol. Phylogen. Evol., 29(1):176-184.
- Porter, B.A., A.C. Fiumera, and J.C. Avise. 2002. Egg mimicry and egg parental care: two mate-attracting tactics by which nesting striped darters (*Etheostoma virgatum*) males enhance reproductive success. Behav. Ecol. Sociobiol., 51:350-359.
- Pottle, R.A., and J.M. Green. 1979. Territorial behaviour of the north temperate labrid, *Tautogolabrus adspersus*. Can. J. Zool., 57: 2337-2347.
- Pressley, P.H. 1981. Pair formation and joint territoriality in a simultaneous hermaphrodite: the coral reef fish *Serranus tigrinus*. Zeit. Tierpsychol., 56: 33-46.
- Protrazka, K. 1994. The reproductive biology of intertidal klipfish (Perciformes: Clinidae) in South Africa. S. Afr. Tydskr. Dierk., 29:244-251.
- Ragland, H.C., and E.A. Fischer. 1987. Internal fertilization and male parental care in the scalyhead sculpin, *Artedius harringtoni*. Copeia, 1987:1059-1062.
- Reavis, R.H., and M.S. Grober. 1999. An integrative approach to sex change: social, behavioural and neurochemical changes to *Lythrypnus dalli* (Pisces). Acta Ethol., 2:51-60.
- Rebstock, G.A. 2003. Long-term change and stability in the California Current System: lessons from CalCOFI and other long-term data sets. Deep-Sea Res. II, 50:2583-2594.
- Reinboth, R. 1970. Intersexuality in fishes. Mem. Soc. Endocrinol., 18:515-543.
- Reynolds, J.D. 1993. Should attractive individuals court more? Theory and a test. Am. Nat., 141:914-927.
- Reynolds, J.D., and I.M. Côté. 1995. Direct selection on mate choice: female redlip blennies pay more for better males. Behav. Ecol., 6:175-181.
- Rice, A.N. and Lobel, P.S., 2003. The pharyngeal jaw apparatus of the Cichlidae and Pomacentridae: function in feeding and sound production. Rev. Fish Biol. Fish., 13:433-444.
- Ricci, S.W., Eggleston, D.B. and Bohnenstiehl, D.R., 2017. Use of passive acoustic monitoring to characterize fish spawning behavior and habitat use within a complex mosaic of estuarine habitats. Bull. Mar. Sci., 93(2):439-453.
- Rimmer, M.A. 1985a. Reproductive cycle of the fork-tailed catfish *Arius graeffei* Kner and Steindachner (Pisces: Ariidae) from the Clarence River, New South Wales. Austr. J. Mar. Freshwat. Res. 36:23-32.
- Rimmer, M.A. 1985b. Early development and buccal incubation in the forktailed catfish *Arius*

- graeffei* Kner and Steindachner (Pisces: Ariidae) from the Clarence River, New South Wales. Austr. J. Mar. Freshwat. Res., 36:405–411.
- Rios-Cardenas, O. and Morris, M.R., 2009. Mating systems and strategies of tropical fishes. Trop. Biol. Conserv. Manage., 3:219–240
- Ripley, W.E. 1946. The soupfin shark and the fishery. Calif. St. Div. Fish Game, Fish Bull. 64:7–37.
- Robards, M.D., J.F. Pratt, and G.A. Rose. 1999. Maturation, fecundity, and intertidal spawning of Pacific sand lance in the northern Gulf of Alaska. J. Fish Biol., 54:1050–1068.
- Roberts, C.D. 1989. Reproductive mode in the percomorph fish genus *Polyprion* Oken. J. Fish Biol., 34:1–9.
- Robertson, D.R. 1991. The role of adult biology in the timing of spawning in tropical reef fishes. Pp. 356–386. In: The ecology of fishes on coral reefs. P.F. Sale (ed.). Academic Press.
- Robertson, D.R., and R.R. Warner. 1978. Sexual patterns in the labroids of the western Caribbean, II. The parrotfishes (Scaridae). Smithson. Contrib. Zool., 255.
- Robertson, D.R., and S.G. Hoffman. 1977. The roles of female mate choice and predation in the mating systems of some tropical labroid fishes. Zeit. Tierpsychol., 45:298–320.
- Robertson, D.R., C.W. Petersen, and J.D. Brawn. 1990. Lunar reproductive cycles of benthic-brooding reef fishes: reflections of larval biology or adult biology? Ecol. Monogr., 60:311–329.
- Robertson, D.R., R. Reinboth, and R.W. Bruce. 1982. Gonochorism, protogynous sex change and spawning in three sparismatnine parrotfishes from the western Indian Ocean. Bull. Mar. Sci., 32:868–879.
- Robertson, D.R., and G. Justines. 1982. Protogynous hermaphroditism and gonochorism in four Caribbean reef gobies. Environ. Biol. Fish., 7:137–142.
- Robins, C.R., G. Carleton Ray, J. Douglass, and R. Freund. 1986. A field guide to Atlantic coast fishes of North America. Houghton Mifflin.
- Rohwer, S. 1978. Parent cannibalism of offspring and egg raiding as a courtship strategy. Am. Nat., 112:429–440.
- Rosenblatt, R.H., and L.R. Taylor, Jr. 1971. The Pacific species of the clinid fish tribe Starksini. Pac. Sci., 25:436–463.
- Ross, R.M. 1978. Reproductive behavior of the anemonefish *Amphiprion melanopus* on Guam. Copeia, 1978:103–107.
- Rowland, W.J. 1989. The ethological basis of mate choice in male three-spine sticklebacks, *Gasterosteus aculeatus*. Copeia, 38:112–120.
- Rowland, W.J. 1994. The proximate basis of stickleback behavior: evolutionary perspective. Pp 297–344. In: The evolutionary biology of the threespine stickleback. M. Bell, and S. Foster (eds.). Oxford Univ. Press.
- Rowland, W.J. 1982. Mate choice by male sticklebacks, *Gasterosteus aculeatus*. Anim. Behav., 30:1093–1098.
- Rowland, W.J., N. Grindler, R.D. MacLaren, and R. Granquist. 2002. Male preference for a subtle posture cue that signals spawning readiness in female sticklebacks. Anim. Behav., 63:743–748.
- Russell, J.E., F.W.H. Beamish, and R.J. Beamish. 1987. Lentic spawning by the Pacific lamprey, *Lampetra tridentata*. Can. J. Fish. Aquat. Sci., 44:476–478.
- Sadovy, Y. and M. Domeier. 2005. Perplexing problems of sexual patterns in the fish genus *Paralabrax* (Serranidae, Serraninae). J. Zool., 267(2), 121–133.

- Sadovy, Y., and P.L. Colin. 1995. Sexual development and sexuality in the Nassau grouper. *J. Fish Biol.*, 46:961–976.
- Sadovy, Y., and T.J. Donaldson. 1995. Sexual patterns of *Neocirrhites armatus* (Cirrhitidae) with notes on other hawkfish species. *Environ. Biol. Fish.*, 42:143–150.
- Sakai, Y. 1997. Alternative spawning tactics of female angelfish according to two different contexts of sex change. *Behav. Ecol.*, 8:372–377.
- Sakamoto, T., and K. Suzuki. 1978. Spawning behaviour and early life history of the porcupine puffer, *Diodon holacanthus*, in aquaria. *Jpn. J. Ichthyol.*, 24:261–270.
- Sale, P.F. 1991. Reef fish communities: open nonequilibrium systems, pp. 564–598. In: *The ecology of fishes on coral reefs*. P.F. Sale (ed.). Academic Press.
- Sancho, G., A.R. Solow, and P.S. Lobel. 2000. Environmental influences on diel timing of spawning in coral reef fishes. *Mar. Ecol. Prog. Ser.*, 206:193–212.
- Sargent, R.C. 1997. Parental care. Pp. 292–315. In: *Behavioral ecology of teleost fishes*. J.-G. Godin (ed.). Oxford Univ. Press.
- Sargent, R.C. 1992. Ecology of filial cannibalism in fish: theoretical perspectives. Pp. 38–62. In: *Cannibalism: ecology and evolution among diverse taxa*. M.A. Elgar, and B.J. Crespi (eds.). Oxford Univ. Press.
- Sargent, R.C., P.D. Taylor, and M.R. Gross. 1987. Parental care and the evolution of egg size in fishes. *Am. Nat.*, 129:32–46.
- Schaefer, K.M. 1998. Reproductive biology of yellowfin tuna (*Thunnus albacares*) in the eastern Pacific Ocean. *Bull. Inter-Am. Trop. Tuna Comm.*, (21):1–272.
- Schmale, M.C. 1981. Sexual selection and reproductive success in males of the bicolor damselfish, *Eupomacentrus partitus* (Pisces: Pomacentridae). *Anim. Behav.*, 29:1172–1184.
- Schultz, E.T. 1993. Sexual size dimorphism at birth in *Micrometrus minimus* (Embiotocidae): a prenatal cost of reproduction. *Copeia*, 1993:456–463.
- Schultz, E.T., L. M. Clifton, and R.R. Warner. 1991. Energetic constraints and size-based tactics: the adaptive significance of breeding-schedule variation in a marine fish (Embiotocidae: *Micrometrus minimus*). *Am. Nat.*, 138:1408–1430.
- Schultz, R.C., and P.C. Rountos. 2001. Analysis of daily growth patterns in young-of-year male dwarf surfperch (Embiotocidae: *Micrometrus minimus*) reveals alternative strategies: breed after birth or grow. *Copeia*, 2001:14–24.
- Scofield, E.C. 1931. The striped bass of California. *Div. Fish Game Calif., Fish Bull.* (29): 1–82.
- Scott, W.B., and M G. Scott. 1988. Atlantic fishes of Canada. *Can. Bull. Fish. Aquat. Sci.*, 219:1–731.
- Sergiou, K.I., P. Economidis, and A. Sinis. 1996. Sex ratio, spawning season and size at maturity of red bandfish in the western Aegean Sea. *J. Fish Biol.*, 49:561–572.
- Shapiro, D.Y., Y. Sadovy, and A. McGehee. 1994. Periodicity of sex change and reproduction in the protogynous grouper, *Epinephelus guttatus*. *Bull. Mar. Sci.*, 53:1151–1162.
- Shaw, E. 1971. Evidence of sexual maturation in young adult shiner perch, *Cymatogaster aggregata* Gibbons (Perciformes, Embiotocidae). *Am. Mus. Novit.*, 2479:1–10.
- Shaw, E., and J. Allen. 1977. Reproductive behavior in the female shiner perch *Cymatogaster aggregata*. *Mar. Biol.*, 40:81–86.
- Shen, S.-C., R.-P. Lin, and F. C.-C. Liu. 1979. Redescription of protandrous hermaphroditic moray eel (*Rhinomuraena quaesita* Garman). *Bull. Inst. Zool., Acad. Sinica*, 18:79–87.
- Sherwood, N.M., A L. Kyle, H. Kreiberg, C.M. Warby, T.H. Magnus, J. Carolsfeld, and W.S.

- Price. 1991. Partial characterization of a spawning pheromone in the herring *Clupea harengus pallasii*. Can. J. Zool., 69:91–103.
- Shinomiya, A., and O. Ezaki. 1991. Mating habits of the rockfish *Sebastes inermis*. Environ. Biol. Fish., 30:15–22.
- Shiogaki, M. 1982. Larvae, juveniles and a gravid female of the blennioid *Cryptacanthodes bergi*, collected from Aomori, Japan. Jpn. J. Ichthyol., 29:102–114.
- Sibeaux, A., Cole, G.L. and Endler, J.A., 2019. The relative importance of local and global visual contrast in mate choice. Animal Behaviour, 154:143-159.
- Sikkel, P.C. 1988. Factors influencing spawning site choice by female garibaldi, *Hypsypops rubicundus* (Pisces: Pomacentridae). Copeia, 1988:710–718.
- Sikkel, P.C. 1989. Egg presence and developmental stage influence spawning site choice by female garibaldi. Anim. Behav., 38:447–456.
- Sikkel, P.C. 1990. Social organization and spawning in the Atlantic sharpnose puffer, *Canthigaster rostrata* (Tetraodontidae). Environ. Biol. Fish., 27:243–254.
- Sikkel, P.C. 1993. Changes in plasma androgen levels associated with changes in male reproductive behavior in a brood cycling marine fish. Gen. Comp. Endocrinol., 89:229–237.
- Sikkel, P.C. 1994a. Filial cannibalism in a paternal-caring marine fish: the influence of egg developmental stage and position in the nest. Anim. Behav., 47:1149–1158.
- Sikkel, P.C. 1994b. Why female garibaldi prefer males with young eggs: a test of the parental investment hypothesis. Ethol. Ecol. Evol., 6:191–211.
- Sikkel, P.C. 1995a. Effects of nest quality on male courtship and female spawning-site choice in an algal-nesting damselfish. Bull. Mar. Sci., 57:682–689.
- Sikkel, P.C. 1995b. Diel periodicity of spawning activity in a permanently territorial damselfish: a test of adult feeding hypotheses. Environ. Biol. Fish., 42:241–251.
- Sikkel, P.C. 1998. Competitor intrusions and mate-search tactics in a territorial marine fish. Behav. Ecol., 9:439–444.
- Sikkel, P.C. and D.L. Kramer. 2006. Territory revisits reduce intrusion during spawning trips by female yellowtail damselfish, *Microspathodon chrysurus*. Animal behaviour, 71(1):71-78.
- Sikkel, P.C., S.E. Herzlieb, and D.L. Kramer. 2005. Compensatory cleaner-seeking behavior following spawning in female yellowtail damselfish. Mar. Ecol. Prog. Ser., 296:1-11.
- Sikkel, P.C. and C.A. Fuller. 2010. Shoaling preference and evidence for maintenance of sibling groups by juvenile black perch *Embiotoca jacksoni*. J. Fish Biol., 76(7):1671-1681.
- Simal Rodríguez, A., A. Grau, J. Castro-Fernández, et al. 2021. Reproductive biology of pipefish *Syngnathus typhle* and *S. abaster* (Syngnathidae) from Western Mediterranean Sea. J. Ichthyol., 61:608–615.
- Smith, C. 1992. Filial cannibalism as a reproductive strategy in caregiving teleosts? Neth. J. Zool., 42:607–613.
- Smith, C.L. 1975. The evolution of hermaphroditism in fishes. Pp. 295–310. In: Intersexuality in the animal kingdom. R. Reinboth (ed.). Springer Verlag.
- Smith, C.L. 1965. The patterns of sexuality and the classification of serranid fishes. Am. Mus. Novit., (2207):1–20.
- Smith, C.L., and E.H. Atz. 1973. Hermaphroditism in the mesopelagic fishes *Osmosudis lowei* and *Alepisaurus ferox*. Copeia, 1973:41–44.
- Smith, C.L., and P.H. Young. 1966. Gonad structure and the reproductive cycle of the kelp bass,

- Paralabrax clathratus*, with comments on the relationships of the serranid genus *Paralabrax*. Calif. Fish Game, 52:283–292.
- Smith, C., and P. Reay. 1991. Cannibalism in teleost fish. Rev. Fish Biol. Fish., 1:41–64.
- Smith, C., and R.J. Wootton. 1995. The costs of parental care in teleost fishes. Rev. Fish. Biol., 5:7–22.
- Somerton, D.A., and W. Donaldson. 1998. Parasitism of the golden king crab, *Lithodes aequispinus*, by two species of snailfish, genus *Careproctus*. Fish. Bull., 96:871–884.
- Sorensen, P.W., and N.E. Stacey. 1999. Evolution and specialization of fish hormonal pheromones. Pp. 15–47. In: Advances in chemical signals in vertebrates. R.E. Johnson, D. Muller-Schwarze, and P.W. Sorensen (eds.). Kluwer Academic/Plenum Publishers.
- Sorensen, P.W., and H.M. Levesque. 2021. Hormonal prostaglandin F2 α mediates behavioral responsiveness to a species-specific multi-component male hormonal sex pheromone in a female fish. Integrative and comparative biology, 61(1):193–204.
- Spanier, E. 1979. Aspects of species recognition by sound in four species of damselfishes, genus *Eupomacentrus* (Pisces: Pomacentridae). Zeit. Tierpsychol., 51:301–316.
- St. Mary, C. 1993. Novel sexual patterns in two simultaneously hermaphroditic gobies, *Lythrypnus dalli* and *Lythrypnus zebra*. Copeia, 1993:1062–1072.
- St. Mary, C. 2000. Sex allocation in *Lythrypnus* (Gobiidae): variations on a hermaphroditic theme. Environ. Biol. Fish., 58:321–333.
- Stacey, N.E. 1987. Roles of hormones and pheromones in fish reproductive behavior. Pp. 28–69. In: Psychobiology of reproductive behavior: an evolutionary perspective. D. Crews (ed.), Prentice-Hall.
- Stacey, N.E., A.L. Kyle, and N.R. Liley. 1986. Fish reproductive pheromones. Pp. 117–133. In: Chemical signals in vertebrates Vol. 4. D. Duvall, D. Muller-Schwarze, and R.M. Silverstein (eds.). Plenum Press.
- Stacey, N.E., and A.S. Houston. 1982. Spawning and feeding behavior of captive Pacific herring, *Clupea harengus pallasi*. Can. J. Fish. Aquatic Sci., 39:489–498.
- Stacey, N.E., and P.W. Sorensen. 2002. Hormonal sex pheromones in fish. Pp. 375–434. In: Hormones, brain, and behavior. D.W. Pfaff et al. (eds.), Academic Press.
- Stein, D.L., and W.G. Pearcy. 1982. Aspects of reproduction, early life history, and biology of macrourid fishes off Oregon, USA. Deep-Sea Res., 29:1313–1329.
- Stephens, J.S., Jr., R.K. Johnson, G.S. Key, and J.E. McCosker. 1970. The comparative ecology of three sympatric species of California blennies of the genus *Hypsoblennius* Gill (Teleostomi, Blenniidae). Ecol. Monogr., 40:213–233.
- Stockley, P., M.J.G. Cage, G.A. Parker, and P. Moller. 1997. Sperm competition in fishes: the evolution of testis size and ejaculate characteristics. Am. Nat., 149:933–954.
- Strand, S. 1978. Community structure among reef fish in the Gulf of California: the use of reef space and interspecific foraging associations. Ph.D. diss., Univ. Calif., Davis.
- Strange, R.M. 2001. Female preference and the maintenance of male fin ornamentation in three egg-mimic darters (Pisces: Percidae). J. Freshwat. Res., 16:267–271.
- Sunobe, T. 1999. Mating system and hermaphroditism in the gobiid fish, *Priolepis cincta*, at Kagoshima, Japan. Ichthyol. Res., 46:103–105.
- Sunobe, T., and A. Nakazono. 1993. Sex change in both directions by alteration of social dominance in *Trimma okinawae* (Pisces: Gobiidae). Ethology, 94:339–345.
- Swenson, R.O. 1997. Sex-role reversal in the tidewater goby, *Eucyclogobius newberryi*. Environ. Biol. Fish., 50:27–40.

- Szyper, J.P., M.J. Anderson, and N.H. Richman. 1991. Preliminary aquaculture evaluation of moi (*Polydactylus sexfilis*). *Progr. Fish-Cult.*, 53:20–25.
- Tanaka, S., Y. Shiobara, S. Hioki, H. Abe, G. Nishi, K. Yano, and K. Suzuki. 1990. The reproductive biology of the frilled shark, *Chlamydoselachus anguineus*, from Suruga Bay, Japan. *Jpn. J. Ichthyol.*, 37:273–291.
- Tapia-Garcia, M., M.C. Garcia-Abad, L. de Guevara, and G. Cerdaneres. 2000. Reproduction, distribution and abundance of *Bothus constellatus* (Pisces: Bothidae), in the Gulf of Tehuantepec, Mexico. *Rev. Biol. Trop.*, 48:205–213.
- Tavolga, W.N. 1956. Visual, chemical and sound stimuli as cues in the sex discriminatory behavior of the gobiid fish *Bathygobius saporator*. *Zoologica*, 41:49–64.
- Tavolga, W.N. 1958a. The significance of underwater sounds produced by males of the gobiid fish, *Bathygobius saporator*. *Physiol. Zool.*, 31: 259–271.
- Tavolga, W.N. 1958b. Underwater sounds produced by the males of the blennioid fish, *Chasmodes bosquianus*. *Ecology*, 39:759–760.
- Taylor, R.G., J.A. Whittington, H.J. Grier, and R.E. Crabtree. 2000. Age, growth, maturation, and protandric sex reversal in common snook, *Centropomis undecimalis*, from the east and west coasts of Florida. *Fish. Bull.*, 98:612–624.
- Tester, A.L., and M. Takata. 1953. Contribution to the biology of the aholehole, a potential baitfish. Final Report, Ind. Res. Adv. Council Grant No. 29, Hawaii Mar. Lab., Univ. Hawaii.
- Thompson, W.F., F.H. Bell, H.A. Dunlop, L.P. Schultz, and R. Van Cleve. 1936. The spawning of the silver smelt, *Hypomesus pretiosus*. *Ecology*, 17:158–168.
- Thomson, D.A., and K.A. Muench. 1976. Influence of tides and waves on the spawning behavior of the Gulf of California grunion, *Leuresthes sardina* (Jenkins and Everman). *Bull. S. Calif. Acad. Sci.*, 75:198–203.
- Thresher, R.E. 1984. Reproduction in reef fishes. TFH Publications.
- Thresher, R.E. 1985. Brood-directed parental aggression and early brood loss in the coral reef fish, *Acanthochromis polyacanthus* (Pomacentridae). *Anim. Behav.*, 33:897–907.
- Timmons, M., and R.N. Bray. 1997. Age, growth, and sexual maturity of shovelnose guitarfish, *Rhinobatos productus* (Ayres). *Fish. Bull.*, 95:349–359.
- Tinbergen, N. 1952. The curious behavior of the stickleback. *Sci. Amer.*, 187:22–26.
- Tokranov, A.M. 1988. Reproduction of mass species of sculpins in coastal waters of Kamchatka. *Soviet J. Mar. Biol.*, 14:211–214.
- Tomas, J., and J. Panfili. 2000. Otolith microstructure examination and growth patterns of *Vinciguerria nimbaria* (Photichthyidae) in the tropical Atlantic Ocean. *Fish. Res.*, 46:131–145.
- Tomlinson, J.T. 1966. The advantages of hermaphroditism and parthenogenesis. *J. Theoret. Biol.*, 11:54–58.
- Torres-Villegas, J., and L. Perez-Gomez. 1988. Fecundity variation of *Opisthonema libertate* (Guenther, 1866) (Pisces: Clupeidae) from 1983 to 1985 in Bahia Magdalena, Baja California Sur, Mexico. *Invest. Pesq.*, 52:193–206.
- Turner, C. H., and E.E. Ebert. 1962. The nesting of *Chromis punctipinnis* (Cooper) and a description of their eggs and larvae. *Calif. Fish Game*, 48:243–248.
- Valiela, I. 1995. *Marine Ecological Processes*. 2d ed. Springer-Verlag. NY.
- van den Berghe, E. P. 1988. Piracy as an alternative reproductive tactic for males. *Nature*, 334:697–698.
- Vallon, M., Grom, C., Kalb, N., Sprenger, D., Anthes, N., Lindström, K. and Heubel, K.U.,

2016. You eat what you are: personality-dependent filial cannibalism in a fish with paternal care. *Ecol. Evol.*, 6(5):1340-1352.
- Villavicencio-Garayzar, C.J. 1993. Observations on the reproductive biology of *Narcine brasiliensis* (Olfers) (Pisces: Narcinidae), in Bahia Almejas, BCS, Mexico. *Rev. Inv. Cient.*, 4:95-99.
- Villavicencio-Garayzar, C.J. 1995. Seasonal distribution and reproductive condition of the rays (Pisces: Batoidei), commercially caught in Bahia Almejas, BCS, Mexico. *Rev. Inv. Cient. Ser. Cienc. Mar. Univ. Autonoma Baja Calif. Sur*, 6:1-12.
- Villavicencio-Garayzar, C.J. C.D. Hoffmann, and E.M. Melendez. 1994. Size and reproduction of the ray *Dasyatis longus* (Pisces: Dasyatidae) in Almejas Bay, Baja California Sur, Mexico. *Rev. Biol. Trop.*, 42:375-377.
- Walford, L.A. 1932. The California barracuda (*Sphyræna argentea*). *Calif. Dep. Fish Game, Fish Bull.*, (37):1-120.
- Walker, H.J. P.A. Hastings, J.R. Hyde, R.N. Lea, O.E. Snodgrass, and L.F. Bellquist. 2020. Unusual occurrences of fishes in the Southern California Current System during the warm water period of 2014-2018. *Estuar. Coast. Shelf S.*, 236:106634.
- Ware, D.M. 1975. Relation between egg size, growth and natural mortality of larval fish. *J. Fish. Res. Bd. Can.*, 32:2503-2512.
- Warner, R.R. 1975a. The reproductive biology of the protogynous hermaphrodite *Pimelometopon pulchrum* (Pisces: Labridae). *Fish. Bull.*, 73:262-283.
- Warner, R.R. 1975b. The adaptive significance of sequential hermaphroditism in animals. *Am. Nat.*, 109:61-82.
- Warner, R.R. 1978. The evolution of hermaphroditism and unisexuality in aquatic and terrestrial vertebrates. Pp 77-101. In: *Contrasts in behavior*, E.S. Reese and F.J. Lighter (eds.). Wiley.
- Warner, R.R. 1984. Mating behavior and hermaphroditism in coral reef fishes. *Am. Sci.*, 72:128-136.
- Warner, R.R. 1988a. Sex change in fishes: hypotheses, evidence, and objectives. *Environ. Biol. Fish.*, 22:81-90.
- Warner, R.R. 1988b. Sex change and the size-advantage model. *Trends Ecol. Evol.*, 3(6):133-136.
- Warner, R.R., and E.T. Schultz. 1992. Sexual selection and male characteristics in the bluehead wrasse, *Thalassoma bifasciatum*: mating site acquisition, mating site defense and female choice. *Evolution* 46:1421-1442.
- Warner, R.R., and L.M. Dill. 2000. Courtship displays and coloration as indicators of safety rather than male quality: the safety assurance hypothesis. *Behav. Ecol.*, 11:444-451.
- Warner, R.R., and P. Lejeune. 1985. Sex change limited by parental care: a test using four Mediterranean labrid fishes. *Mar. Biol.*, 87:89-99.
- Warner, R.R., and R.K. Harlan. 1982. Sperm competition and sperm storage as determinants of sexual dimorphism in the dwarf surfperch, *Micrometrus minimus*. *Evolution* 36:44-55.
- Warner, R.R., D.R. Robertson, and E.G. Leigh, Jr. 1975. Sex change and sexual selection. *Science*, 190:633-638.
- Washington, B.B., H.G. Moser, W.A. Laroche, and W.J. Richards. 1984. Scorpaeniformes: development. Pp. 405-428. In: *Ontogeny and systematics of fishes*. H.G. Moser et al. (eds.). ASIH Special Publ. No 1. Watson, W., and J. M. Leis. 1974. Ichthyoplankton of Kaneohe Bay, Hawaii. Sea Grant Tech. Rep. TR-75-01.

- Webb, R.O., and M.J. Kingsford. 1992. Protogynous hermaphroditism in the half-banded sea perch, *Hypoplectrodes maccullochi* (Serranidae). J. Fish Biol., 40:951–961.
- Wetzel, J., and J.P. Wourms. 1995. Adaptations for reproduction and development in the skin-brooding ghost pipefishes, *Solenostomus*. Environ. Biol. Fish., 44:363–384.
- White, G.G., T.A. Munroe, and H.M. Austin. 2003. Reproductive seasonality, fecundity, and spawning frequency of tautog (*Tautoga onitis*) in the lower Chesapeake Bay and coastal waters of Virginia. Fish. Bull., 101:424–442.
- Wicklund, R.I. 1970. Observations on the spawning of the cunner in waters of northern New Jersey. Chesapeake Sci. 11:137.
- Wiebe, J.P. 1968. The reproductive cycle of the viviparous surfperch, *Cymatogaster aggregata* Gibbons. Can. J. Zool., 46:1221–1234.
- Wilkie, D.W. 1966. Colour pigments in the penpoint gunnel *Apodichthys flavidus* and their ecological significance. Master's Thesis, University British Columbia.
- Winemiller, K.O., and K.A. Rose. 1992a. Patterns of life-history diversification in North American fishes: implications for population regulation. Can. J. Fish. Aquat. Sci., 49:2196–2218.
- Winemiller, K.O., and K.A. Rose. 1992b. Why do most fish produce so many tiny offspring? Am. Nat., 142:585–603.
- Woodhull, C. 1947. Spawning habits of the striped bass (*Roccus saxatilis*) in California waters. Calif. Fish Game, 33:97–102.
- Wootton, R.J. 1984. A functional biology of sticklebacks. Univ. California Press, Berkeley.
- Wootton, R.J. 1994. Life histories as sampling devices: optimum egg size in pelagic fishes. J. Fish Biol., 45:1067–1077.
- Wootton, R.J. and Smith, C., 2014. Reproductive biology of teleost fishes. John Wiley & Sons.
- Wourms, J.P. 1991. Reproduction and development of Sebastes in the context of the evolution of piscine viviparity. Environ. Biol. Fish., 30:111–126.
- Wourms, J.P., and J. Lombardi. 1992. Reflections on the evolution of piscine viviparity. Am. Zool., 32:276–293.
- Wourms, J.P., B.D. Grove, and J. Lombardi. 1988. The maternal-embryonic relationship in viviparous fishes. Pp. 1–134. In: Fish Physiology Volume 11B. W.S. Hoar and D.J. Randall (eds.). Academic Press.
- Yabe, M. 1985. Comparative osteology and myology of the superfamily Cottoidea (Pisces: Scorpaeniformes), and its phylogenetic classification. Mem. Fac. Fish. Hokkaido Univ., 32:1–130.
- Yanagimoto, T., and R.L. Humphreys. 2005. Maturity and reproductive cycle of female armorhead, *Pseudopentaceros wheeleri*, from the southern Emperor-northern Hawaiian Ridge Seamounts. Fish. Sci., 71:1059–1068.
- Yano, K., F. Sato, and T. Takahashi. 1999. Observations on mating behavior of the manta ray, *Manta birostris*, at the Ogasawara islands, Japan. Jpn. J. Ichthyol., 46:289–296.
- Yoneda, M., M. Tokimura, H. Fujita, N. Takeshita, K. Takeshita, M. Matsuyama, and S. Matsuura. 1997. 1998. Reproductive cycle and sexual maturity of the anglerfish *Lophiomus setigerus* in the East China Sea with a note on specialized spermatogenesis. J. Fish Biol., 53:164–178.
- Yoneda, M., M. Tokimura, H. Fujita, N. Takeshita, K. Takeshita, M. Matsuyama, and S. Matsuura. 1997. Ovarian structure and batch fecundity in anglerfish *Lophiomus setigerus*. J. Fish. Biol., 52:94–106.

- Yoon, T.-H., and K. Shimazaki. 1981. Ovarian maturation of the Pacific pomfret, *Brama japonica* Hilgendorf, in the North Pacific Ocean. Hokkado University, Faculty of Fisheries, Coll. Contrib. Res. Inst. No. Pac. Fish., Contrib. No., 131:79–90.
- Young, P.C., and R.B. Martin. 1982. Evidence for protogynous hermaphroditism in some lethrinid fishes. *J. Fish Biol.*, 21:475–491.
- Young, P.C., and R.B. Martin. 1985. Sex ratios and hermaphroditism in nemipterid fish from northern Australia. *J. Fish. Biol.*, 26:273–287.
- Zaiser, M.J., and J.T. Moyer. 1981. Notes on the reproductive behavior of the lizardfish *Synodus ulae* at Miyake-jima, Japan. *Jpn. J. Ichthyol.*, 28:95–98.
- Zeeck, E., and V. Ide. 1996. The role of sex pheromones in the reproductive behavior of *Blennius pavo* (Riso). Pp. 33–38. In: *Fish pheromones: origins and modes of action*. A.V.M. Canario, and D.M. Power (eds.), Univ. Algarve Press.
- Zeiner, S.J., and P. Wolf. 1993. Growth characteristics and estimates of age at maturity of two species of skates (*Raja binoculata* and *Raja rhina*) from Monterey Bay, California, pp. 87–99. In: *Conservation Biology of Elasmobranchs*, S. Branstetter (ed.). NOAA Tech. Rep. NMFS 115.