

Faits divers

Morphological and chronological tables of embryonic development in fish*

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This is a brief presentation of some references in embryonic development of fish including some species of agnatha. Numerous papers describe some morphological aspects of embryogenesis and the list below give several of them to show the variety of species studied and the long history of this discipline. Some works from the last century are very detailed, accurate and sometimes the drawings are colored by hand. Most of the recent papers give informations on chronology and

details on the incubation conditions (temperature and sometimes dissolved oxygene and other compounds).

Several works were conducted in a prospective of ecological and evolutionary embryology and some were recently edited by BALON (1985). A significant contribution came from Japanese scientists in the framework of trials to breed fish in sea ranching programmes.

Table 1. Some references of morphological and sometimes chronological tables of embryonic development

<i>Abramis brama</i> (hybrids)	RYABOV, 1973
<i>Acipenser transmontanus</i>	BEER, 1980
<i>Adinia xenica</i>	CUNNINGHAM, 1982
<i>Amia calva</i>	DEAN, 1895; BALLARD, 1986
<i>Anguilla japonica</i>	YAMAMOTO 1981-1982, YAMAMOTO <i>et al.</i> , 1975
<i>Aphyosemion calliurum</i>	PETERS, 1963
<i>Aptocyclus ventricosus</i>	KYÛSTIN, 1975
<i>Barbus barbus</i>	PENAZ, 1973
<i>Brachydanio rerio</i>	HISAOKA and BATTLE, 1958; LAALE, 1984
<i>Carassius auratus</i>	KAJISHIMA, 1960
<i>Chondrostoma nasus nasus</i>	DEDUAL, 1990
<i>Dicentrarchus labrax</i>	BARNABÉ, 1976
<i>Dorosoma petenense</i>	SHELTON and STEPHENS, 1980
<i>Dorosoma cepedianum</i>	"
<i>Eopsetta qriqorjewi</i>	FUJITA, 1965
<i>Ernogrammus hexagrammus</i>	FUJITA and USHITA, 1959
<i>Esox lucius</i>	LINDROTH, 1946; GIHR, 1957
<i>Fugu poecilonotus</i>	FUJITA, 1956a
<i>Fugu rubripes</i>	FUJITA and UENO, 1956a
<i>Fugu stittonotus</i>	FUJITA, 1956b
<i>Fundulus heteroclitus</i>	OPPENHEIMER, 1937; ARMSTRONG and CHILD, 1965
<i>Gobius niger jozo</i>	BALLARD, 1969
<i>Heterandria formosa</i>	FRASER and RENTON, 1940
<i>Hypophthalmichthys molitrix</i> (hybrids)	RYABOV, 1973
<i>Ictalurus nebulosus</i>	ARMSTRONG and CHILD, 1962
<i>Inimicus japonicus</i>	FUJITA and NAKAHARA, 1955
<i>Labeotropheus</i>	BALON, 1977
<i>Lampetra lamotteni</i> and others	SMITH <i>et al.</i> , 1968

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Lepomis macrochirus and hybrids
Micromesistius poutassou
Nibeia argentata
Nothobranchius guntheri
Nothobranchius korthausae
Oncorhynchus keta
Oncorhynchus mykiss (*S. gairdneri*)

Oncorhynchus nerka
Ophiocephalus striatus
Oryzias latipes

Percina caprodes semifasciata
Platypoecilus and *Xiphophorus*
Platypoecilus indicus
Platypoecilus maculatus
Poecilia reticulata
Polyodon spatula
Pseudoblennius percoides
Salmo trutta fario
Salmo salar

Scyliorhinus canicula
Sebastes oblongus
Sillago sihama
Sphyrnaea pinguis
Tanakuis kitaharai
Thymallus thymallus
Tinca tinca
Trichogaster trichopterus

HECKERMAN, 1969
 COOMBS and HIBY, 1979
 FUJITA, 1956c
 PETERS, 1963
 WOURMS, 1972
 MAHON and HOAR, 1956
 PASTEELS, 1936; BALLARD, 1973,
 WITSCHI, 1956-1962; VERNIER, 1969,
 KNIGHT, 1963
 VELSEN, 1980
 YAPCHIONGCO and DEMONTEVERDE, 1965
 GAMÔ and TERAJIMA, 1963
 HISAOKO and BATTLE, 1958
 PAINE and BALON, 1984
 TAVOLGA, 1949
 FUJITA and UENO, 1956
 TAVOLGA and RUGH, 1947
 BUI, 1963 in CHAMBOLLE, 1963
 BALLARD and NEEDHAM, 1964
 FUJITA, 1957
 HENNEGUY, 1888; KORPSCH, 1898
 TRIFONA *et al.*, 1959; KLINKHARDT, *et al.*, 1987;
 BATTLE, 1944
 BALFOUR, 1978; MELLINGER *et al.*, 1986;
 FUJITA, 1958
 UNENO and FUJITA, 1954
 SHOJIMA *et al.*, 1957
 FUJITA, 1965
 BIELEK, 1974; ZAYTSEV, 1986
 PENAZ *et al.*, 1981
 HISAOKA and FIRLIT, 1962

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