

[SCIENTIFIC RESULTS OF THE PHILIPPINE CRUISE OF THE FISHERIES STEAMER
"ALBATROSS," 1907-1910. NO. 20.]

DESCRIPTION OF A NEW FAMILY OF PEDICULATE FISHES
FROM CELEBES.

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During the Philippine expedition the Fisheries steamer *Albatross* cruised around the island of Celebes and made dredgings at various places off the coast and in the bays of that island. A number of deep-water stations were established in the Gulf of Tomini on the east coast, and among the animals there obtained was the remarkable fish that is the subject of this paper.

THAUMATICHTHYIDÆ, new family (Pediculati).

Highly divergent pediculates characterized by elongate, slender body; large, depressed head, with weak, slender bones; enormous horizontal mouth, with large, unequal teeth; upper jaw much longer and broader than lower, the premaxillaries widely separated at tip, leaving a broad edentulate concavity; small eye near angle of mouth; small gill openings, below axil of pectorals; pseudobranchiæ absent; well-developed fins, the pectorals not geniculated, the ventrals absent, a greatly modified detached dorsal spine which lies in a membranous area on the top of the head and terminates in a complex lure within the mouth near the anterior margin of the jaw.

This family is most nearly related to the Ceratiidæ among the known pediculates, but is distinguished therefrom by the greatly expanded and depressed head, the slender body, the shape of the upper jaw, the dentition, the absence of free dorsal spines, the remarkable modification of the illicium, etc.

THAUMATICHTHYS Smith and Radcliffe, new genus.

Body elongate, compressed; head large, depressed, and expanded laterally, the feeble, slender bones separated and held in place by a very thin, translucent membrane; mouth large, cavernous; jaws very broad, unequal; upper jaw with a wide central semicircular indentation

lying between the divergent premaxillaries; maxillary very long and slender, and joined to the side of the mandible; lower jaw included, rounded; long, depressible, unequal curved or hooked teeth in each jaw; a pair of long, hinged, hooked teeth on each side of upper jaw near the tip of the premaxillary, these lying against the roof of the mouth and capable of lateral motion; eye small, near angle of mouth; nostril close to eye; gill openings small, slit-like; gill arches 3, short; lower part of body and head covered with spiniferous tubercles; soft dorsal well developed, with 8 rays; a single subdermal cephalic spine (illicium) extending from frontals nearly to tip of snout, dilating into a small, bulbous organ; the latter projects and is surmounted by a tooth-bearing pedicel; caudal large; anal small; pectoral rays 15.

(*Thaumaticthys*; from *θαῦμα*, a wonder, and *ἰχθύς*, a fish.)

THAUMATICHTHYS PAGIDOSTOMUS Smith and Radcliffe, new species.

Plate 72, figs. 1, 2.

Dorsal 6; caudal 8; anal 4; pectoral 15.

Head large, broad, rectangular, depressed, constricted immediately behind posterior angle of jaws, its length (measured from anterior margin of branchial aperture) 2.06 in total length of fish to base of caudal (2.8 to tip of caudal), its breadth 1.43 in its length, its depth 2.5 in its length; body slender, compressed, tapering; caudal peduncle slender, its depth 6.6 in head; eye minute, 20 in head, 11.3 in snout, situated on upper edge of angle of jaws; snout (measured to tip of projecting premaxillaries) 1.81 in head; mouth horizontal, cavernous, the slender and widely separated cranial bones, with the thin skin, forming an exceedingly elastic boundary; upper jaw much the longer, the tip of the evenly rounded lower jaw not reaching to the cavity between the premaxillaries; maxillary very slender, not dilated at tip, fitting into the side of the mandible near angle of jaw; premaxillaries 1.5 in head, the articular processes elongate, divergent; mandible 1.88 in head; teeth long, unequal, cardiform, depressible, with incurved tips, those on upper jaw the larger, arranged in groups; a wide toothless space at tip of upper jaw where the premaxillaries diverge; a pair of long, hinged, hook-like teeth, the largest 2.35 in premaxillary, inserted near inner process of premaxillary and lying closely applied to roof of mouth, these teeth capable of being swung forward laterally like cranes so as to close the toothless space in front of jaw; a small patch of small teeth on either side of roof of mouth posteriorly; gullet constricted, apparently distensible to a considerable degree; the single detached dorsal spine lying in skin on top of head and extending nearly to margin of upper jaw, where it terminates in a bulbous process about size of eye; this bulb projects through roof of mouth into the oral cavity and appears to be a luminous organ, and from it there extends downward into the mouth a slender pedicel

bearing at its tip a sharp tooth-like process that curves backward; nostrils bulbous, immediately in front of eyes; gill arches with a few very large, plume-like filaments; skin of ventral surface and sides of body with conspicuous prickles resting on a circular base, some prickles extending upward to base of anterior dorsal rays, and a few on opercle.

Dorsal and anal relatively low, the rays simple; caudal elongate, narrow, rounded, the two outer rays above and below simple, the other divided; pectorals small, 3 in head.

Color in alcohol: Above sepia, becoming grayish black on ventral surface; inside of mouth dull gray; fins dark sepia.

Type.—Cat. No. 72952, U.S.N.M., 8.4 cm. in length, taken with a beam trawl at station 5607 (lat. $0^{\circ} 04' 00''$ S.; long. $121^{\circ} 36' 00''$ E.), near Binang Unang Island, Gulf of Tomini, Celebes, at a depth of 761 fathoms, on a bottom of fine sand.

In this extraordinary fish the head is nearly as long as the remainder of the body, and the length of the mouth is more than half that of the head. It would appear that the cavernous, elastic mouth is a trap into which the food is lured and dispatched. The light from the bulb in the roof of the mouth shines through the toothless space in the front of the upper jaw and attracts the prey which, having entered the mouth, is prevented from escaping and brought within reach of the lateral teeth by the two pair of large hinged, hooked teeth.

(*pagidostomus*; from *παγίς*, a trap or snare, and *στόμα*, a mouth.)

