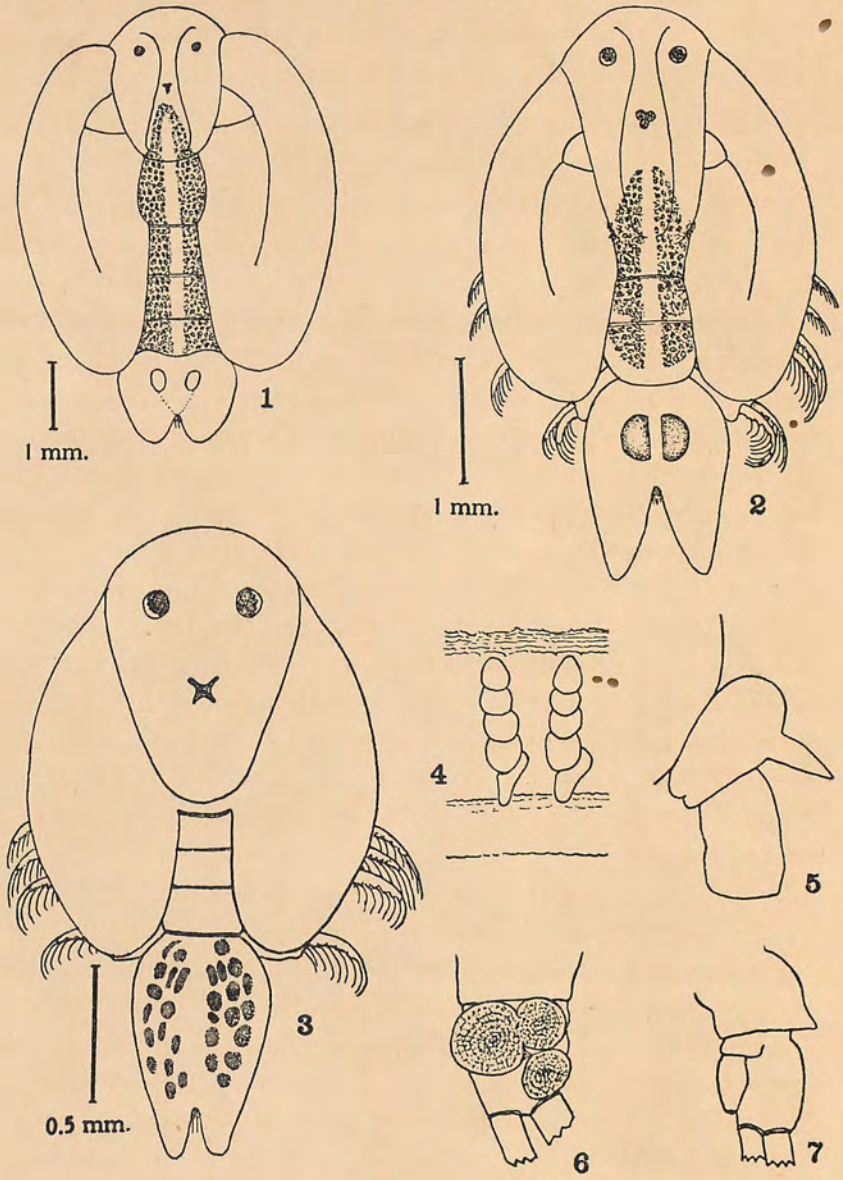

ARGULUS SIAMENSIS, new species.

1. Dorsal view of matured female. 2. Dorsal view of young male. 3. Dorsal view of young female. 4. Two supporting rods of the flexible margin of the sucking disks. 5. Basal joints of fourth swimming leg, showing pointed flap. 6. Ventral surface of third swimming leg of male, showing disks. 7. Ventral surface of fourth swimming leg of male.

A NEW PARASITIC COPEPOD FROM SIAM.

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Plate 22.

Introductory.—A goodly number of both sexes of this parasite were sent to the author by Dr. Hugh M. Smith from Bangkok. They were taken from a cyprinid fish *(Cirrhina)* found dying in a pond on the grounds of Dr. Smith's official residence, June 26, 1924. The fish was thickly infested with the parasites on the dorsal surface, the scales were raised and loose, and some blood was oozing from the skin. About fifty specimens were obtained from this one fish, evenly divided between the two sexes. A single female filled with ripe eggs was taken from the outside surface of a species of *Trichopodus* by Dr. Smith, June 23, 1923, from a pond in the suburbs of Bangkok; the size of this specimen shows that those obtained from the previous fish were only about half grown, although some of them had already begun to develop eggs. Additional specimens of the parasite were obtained from the same cyprinid species found dead or dying in the first-named pond. One lot, taken March 17, 1925, kept alive in a glass vial for some days, laid strings of eggs on the bottom. The affected fishes in all cases were emaciated and anemic.

Argulus siamensis, new species.

Specific characters of the female.—Carapace ovate, one-sixth longer than wide; posterior sinus a little less than one-third the length of the carapace and squarely truncated at its base. The sides of this sinus are usually parallel, but sometimes the tips of the lobes approach each other and they may even meet on the median line. These lateral lobes slightly overlap the base of the abdomen, and are relatively as long in the younger specimens as in the older ones. The lateral eyes are of medium size and are placed far forward, opposite the lateral sinuses of the carapace; the median eye is small and a trifle in front of the center of the cephalic area. Each respiratory area is an elongated ellipse, curved so that its sides are approximately parallel with the lateral margins of the carapace.

In the younger females the cephalic area is considerably more than half (60 per cent) the entire length of the carapace, and its length is more than one and a half times its width. In the matured female this area has shrunk to 40 per cent of the carapace length, but the proportion of its length to its width has changed only a trifle.

Abdomen obovate, in the younger females about half the length and a little less than half the width of the carapace; posterior sinus not quite reaching the center, 44 per cent of the abdominal length. Sperm receptacles of large size and flattened against each other on the midline. Posterior lobes broadly triangular and bluntly rounded at their tips; anal laminae minute and basal. At this age the length of the abdomen is one and a third times its width; in the matured female the abdomen has shrunk to one-fourth of the length of the carapace, and has actually become wider than it is long.

Terminal joints of the first antennae barely reaching beyond the curve of the basal claw; basal joint of second antenna with a stout spine on its posterior margin at the proximal corner. The sucking disks are placed far forward, just behind the lateral eyes, and so close to the median line that they almost touch each other. Their diameter is a trifle more than one-fifth (22 per cent) of the width of the carapace. Each of the supporting rods of the flexible margin is composed of five large disks, the basal one pointed proximally and a little out of line with the others. Maxillipeds moderately stout, the basal plate arched considerably above the surface, narrowed anteriorly, with small posterior teeth, bluntly rounded. Toe of boot-shaped flap on the basal joint of the fourth swimming legs very long, conical, and sharply pointed.

Color, a creamy white, with irregular longitudinal rows of brown pigment on the dorsal surface of the thorax. In the matured female the eggs give the thorax and the posterior portion of the cephalon a decided pink hue when viewed either dorsally or ventrally.

Total length, matured female, 6.55 mm.; carapace 5.55 mm. long, 5 mm. wide; abdomen 1.25 mm. long, 1.80 mm. wide. Young female,

4-5 mm. long; carapace 3 mm. long, 2.75 mm. wide; abdomen 1.60 mm. long, 1.03 mm. wide.

Specific characters of male.—General shape longer and narrower than that of the female; cephalic area proportionally larger, lateral eyes nearly twice the diameter of those of the female. Abdomen one-half longer than wide, considerably narrowed posteriorly; anal sinus less than one-fifth the length of the abdomen (18 per cent); posterior lobes thick and bluntly rounded; anal laminae basal.

Of the secondary sexual characters, the ventral surface of each of the third legs is covered with three adhesion disks, a larger posterior one, which projects considerably and is visible in dorsal view, and two smaller anterior ones. On the fourth legs the posterior flap has almost entirely disappeared from the basal joint, while the peg on the anterior margin of the second joint is large and rather bluntly pointed.

Color. A creamy white, with three irregular longitudinal rows of black spots on the dorsal surface of each testis; no pigment on the thorax.

Total length, 2-3 mm.; carapace 1.66 mm. long, 1.33 mm. wide; abdomen 0.90 mm. long, 0.55 mm. wide.

Types.—Through the courtesy of Dr. Smith, the types of this new species have been deposited in the United States National Museum in Washington where they have received catalog number 56,564. Cotypes have been sent to the Department of Fisheries in Bangkok.

Remarks.—So far as known this is the first parasitic copepod to be described from the inland waters of Siam, and this, coupled with its rather unique characters, makes the specific name an appropriate one.