A preliminary note on the Acephaline Gregarines (Protozoa: Sporozoa) of some Malayan Earthworms. ——— Acephaline gregarines are common parasites in the seminal vesicles of earthworms. In Malaya, no investigations have so far been made on these protozoans. In a preliminary survey of some of the commoner species of earthworms, eight species have been found.

Three of these gregarines have been identified to species, namely *Stomatophora coronata* (Hesse), *S. diadema* Hesse and *Choanocystoides costaricensis* Martiis. Besides these, three genera were recognised, namely *Monocystis* Stein, *Apolocystis* Martiis and *Craterocystis* Martiis. It is hoped that a more detailed account will be published later.

Five species of earthworms were investigated. The distribution of gregarines in these five species is as follows:—

Pheretima peguana (Rosa):
Stomatophora coronata (Hesse), *Monocystis* sp. A and *Apolocystis* sp.

Pheretima hawayana (Rosa):
Stomatophora diadema Hesse and *Monocystis* sp. B.

Pheretima elongata (Perrier):
Stomatophora coronata (Hesse) and *S. diadema* Hesse.

Pheretima indica (Horst):
Choanocystoides costaricensis (Martiis).

Drawida nepalensis Michaelson:
Craterocystis sp. and *Monocystis* spp. A and B.

Both smears and sections of seminal vesicles were studied for their parasites. For detailed morphological study, fresh smears were made in Normal Saline (0.7 per cent). The cover-slip was supported by crushed pieces of cover-glass to prevent distortion of the parasites. The material was then irrigated with vital stains, Neutral Red and Janus Green. Smears and whole seminal vesicles were fixed in Schaudinn's Fluid. Sections and smears were then stained in Heidenhain's Iron Haematoxylin or Mallory's Triple Stain. Smears were also stained in Geimsa for preliminary examination.

Measurements were made of the trophozoites and sporocysts in both smears and sections. It was found that whilst sporocyst sizes were constant for a given species, those of trophozoites show slight differences. In smears the trophozoites are larger due to a certain amount of flattening, whilst in sections they tend to shrink.

Stomatophora coronata (Hesse). This species has an oval body, the anterior end of which bears a sucker, surrounded by a crown of petals. The trophozoites are 52–67u × 20–50u, and have truncated sporocysts of sizes 17–19u × 9.6–11.2u.

Stomatophora diadema Hesse. The specimens are large, flattened and disc-like, with a sucker surrounded by a very large crown of petals, which tend to hide the body. They measure up to 140–160u in diameter. The sporocysts are large and measure 17–19u × 8–10u from one truncated end to the other. This species and *S. coronata* are widespread in Malaya.

Choanocystoides costaricensis Martiis. The trophozoites are cup-shaped with a ciliated crater at the anterior end. They measure up to 60–80u in diameter. The truncated sporocysts are 12.0 × 4.8u. This agrees very closely with the description of *C. costaricensis* given by Martiis (1925, *Monit. Ital. Firenze,* **36:** 219).

Only one species of the genus *Choanocystoides* has so far been recorded, in Central America. In Malaya, it occurs in one species of earthworm, *Pheretima indica* ——— WINNIE C. CHIA, *Department of Zoology, University of Singapore,* 29th January, 1962.

Some new records of parasitic Crustacea from Malayan fresh waters. ——— Whilst making fresh-water collections during the last two years, three new records of parasitic crustaceans were obtained, namely, *Argulus indicus* Weber, *Alitropus typus* Milne Edwards and *Tachaea chinensis* Thielemann.

Argulus indicus was first described from Java by Weber (1892, *Zool. Eregebn. Niederl. Ost. Ind.,* **2:** 544). He found only females. The male was first described from Thailand by Wilson (1927, *J. Siam Soc., Nat. Hist. Suppl.,* **7:** 1). The species has also been recorded in India by Ramakrishna (1951, *Rec. Indian Mus.,* **49:** 208). Our material consists of one male and two females from *Aplocheilus panchax* (Hamilton) taken in April 1961 at the MacRitchie Reservoir, Singapore. *Argulus indicus* has been recorded on many species of fishes but *Trichogaster pectoralis* (Regan) is supposed to be the "real" host according to Wilson (1944, *Proc. U.S. Nat. Mus.,* **94:** 552).

Alitropus typus has been reported both from fresh and salt water in Indonesia, Borneo and India (Nierstrasz and van Swinderen 1931, *Arch. Fur Hydrohiol., Suppl.,* **9:** 399). Our material was collected from *Channa gachua* (Hamilton) at Batu Berendam and the Kuala Pilah—Tampin Road, Malacca. Eight specimens, consisting of both males and females were obtained.

Tachaea chinensis has hitherto been recorded from only China and Japan (Shen, 1936, *Bull. Mem. Inst. Biol.,* **7:** 18). Our material consists of 4 specimens collected on *Macrobrachium geron* Holthuis from Gunong Pulai, Johore.

We are indebted to Mr. R. W. Ingle, British Museum (Natural History) and Mr. P. Kirtisinghe, Aquinas University College, Colombo, Ceylon, for the identifications.
——— A. KARIM, *Fisheries Laboratory, Glugor, Penang* and C. H. FERNANDO, *Department of Zoology, University of Singapore,* 12th June, 1962.

The larva of the Cockle, *Anadara granosa* Linn. ——— The full-grown larva of the variety of the cockle, *Anadara granosa bisenensis,* an economically important species in Japan, is described and figured by Yoshida (1957, *Journ. Shimonoseki College Fisheries,* **6** (3): 63–66). This larva differs from the larva of *Anadara granosa* as found locally in the following features:—

(*a*) The full-grown larva attains a much larger size—0.218 mm. to 0.268 mm. in length.

(*b*) The larva is longer; the ratio of length to height is 1.23 to 1.34.

(*c*) The number of concentric lines is fewer, about 7.

(*d*) The shape is more ovate-oblong.

My identification of the larva was based entirely on shell characters, shape, hinge structure, and texture from Rees (1950, *Hull. Bull. Mar. Ecol.,* **3** (19): 78–80). The initial identification was made by comparing the clearly defined prodissoconch on early spat collected during July to October, 1958, at Kuala Jalan Bharu, Penang, with planktonic larvae collected during the same period. The initial identification was later confirmed by culturing the planktonic larva in the laboratory.