australis from Gomanton, and (b) of Po. murinus in Myotis horsfieldi from Selangor. Nycteribiid flies, the vectors of Polychromophilus spp. were collected from M. australis; they were kindly identified by Mr. A. M. Hutson of the British Museum (Natural History) as Nycteribia parvula. Another nycteribiid, Styliidia fraterna, was collected from specimens of Rhinolophus (which were not infected with Polychromophilus) from Gomanton.

6. Malaria parasites of domestic fowl in Sabah

J. SKIPPON (INTRODUCED BY P. C. C. GARNHAM)

Gametocytes of Akiba caulleryi and all stages of Plasmodium gallinaceum were found in the blood of sick and dying domestic chickens from the vicinity of Kota Kinabalu. This is thought to be the first report of the presence of these parasites in Borneo.

7. Some intestinal protozoa of the orang-utan

W. PETERS, P. C. C. GARNHAM AND R. KILLICK-KENDRICK

An outbreak of dysentery occurred in the orang-utans during our study of the malaria parasites of these animals. Examination of the stools of sick animals revealed large numbers of trophozoites of a histolytica-like amoeba and smaller numbers of Balantidium ? sp. It is thought that the orang-utans probably acquired at least the latter infections from the faeces of wild pigs inhabiting the forest reserve. Treatment with emetine dihydrochloride (1 mg. per kg. intramuscularly daily for 1 week) rapidly alleviated the diarrhoea and resulted in the disappearance of parasites from the stools. We were unable to administer the drug of choice, metronidazole, to the animals by mouth because of its unpleasant taste and are exploring the possibility of using an injectable preparation.

8. Intestinal helminths in Callosciurus nigrovittatus

W. PETERS, R. E. HOWELLS, W. CREWE AND S. McDERMOTT

During the examination of 3 specimens of Callosciurus nigrovittatus from Sabah, (designated as S 1, 2 and 3) the gastrointestinal tracts were searched for helminths. The following 4 species were found:

Nematoda

Fam: Physalopteridae

1. Physaloptera (Physaloptera) sp.
   1 male and 1 female embedded in mucosa of stomach of S 3, in association with a trematode. Not yet finally identified.

2. Subulura andersoni Cobbold, 1876
   In all 3 specimens in the ileocaecal region; commonest in the proximal area of the caecum; immature and adult males and females. Eggs were found in the caecal contents of S 2.

Trematoda

Fam: Dicrocoeliidae

3. Zonorchis sp. nov.
   About 30 mature specimens in the stomach of S 3. This small species (just over 1 mm.), is closely related to Zonorchis borneoensis Fischtal and Kuntz, 1965, and will be described in a separate report.

Cestoda

Fam: ? Hymenolepidae
   An unidentified cestode of which the scolex and immature segments were not recovered so that identification was impossible. (Specimen S 1).

9. Microfilaria in Arborophila charltoni (chestnut breasted tree partridge)
   N. RAJAPAKSA AND P. C. C. GARNHAM

   Microfilariae were found in the blood of a chestnut breasted tree partridge (Arborophila charltoni). This is apparently the first report of filarial worms in this bird. The microfilariae were unsheathed and measured approximately 250-280 μm.; they had graceful curves, a tapering posterior end and well marked transverse cuticular striations. The slide is deposited in the collection of Dr. R. Muller, Department of Medical Helminthology, London School of Hygiene and Tropical Medicine.

10. Some phlebotomid sand-flies and other Diptera of Malaysia and Sri Lanka
    D. J. LEWIS AND R. KILLICK-KENDRICK

   Phlebotomidae (sand-flies) in general. Specimens collected are being studied in a general survey of Phlebotomidae of the Oriental Region. They came from a cave at Gomanton (Sabah), a cow-shed at Pannipitiya (Sri Lanka), and tree buttresses, but no other vegetation, at Klang, Port Dixon, Seremban and Ulu Gombak (Malaya) and Sepilok (Sabah). All these lie in the eastern wetter part of the region, with a rainfall of over 1,000 mm. In much of this part man-biting sand-flies (of the genus Phlebotomus) are uncommon and many species of Sergentomyia occur which are absent in the western part. The fauna of the west is a section of the Saharo-Sindian fauna. Human leishmaniasis is unknown in South East Asia possibly because the sand-flies are not largely anthropophilic.

   Between February 7 and March 1 we examined 418 buttress hollows in East and West Malaysia and found 95 phlebotomids, 0.2 per hollow, comprising one male P. argentipes from Ulu Gombak and 94 of a few species of Sergentomyia, 80 of which were males. This shows a marked contrast with parts of tropical America where several hundred sand-flies can easily be caught at one buttress or on a few sticky traps. Buttress trees had disappeared in many areas, and agricultural and urban development had obviously destroyed many sand-flies. As in tropical America, unbaited sticky traps proved ineffective in forest. Sometimes, owing to heavy rain and semi-darkness, forest phlebotomids were collected in a wet mass of debris and sorted later like plankton. Some of the few known mammalophilic Malaysian sand-flies are known from caves, and include P. (Idiophlebotomus) phlestor (shown by a specimen and figure), a few of which were found among bats in the Gomanton cave. Species of this Oriental subgenus are believed to bite bats, and it was conspicuously absent from the Anak Takun cave near Kuala Lumpur, where bats had disappeared and a non-biting Nemopalpus (Psychodidae) was common.

   Two phlebotomids previously taken by Mr. S. Mahadevan in forest-canopy traps baited with Macaca irus were Sergentomyia, but may have entered by chance, because one trap contained Chaoborus.

   Phlebotomus argentipes. This species, the well known vector of kala-azar in India, probably feeds mostly on cattle and is known from West Malaysia largely owing to a big collection made by Dr. R. H. Wharton and Mr. Bin Omar in 1956 in mosquito box-traps at Kampong (village) Lamir. None was found in the same place on 23 March 1972 nor in boxes or on cattle in 3 villages near Kuala Lumpur. Possibly P. argentipes in West Malaysia does not move far from thick forest, and some may have been cut since 1956. Sand-flies have relatively few parasites, but a female from Ulu Gombak (1964, A. H. Bin Omar) with a large abdominal parasite was shown.

   Many specimens of P. argentipes were found at Pannipitiya on April 18, resting on the inner sides of walls of a cow-shed about dawn and dusk. During the day a few were found with difficulty, hidden in crevices, showing that the somewhat endophilic habit of a species can escape attention. Offspring of these flies, reared in England, did not bite man readily, and this may point to the reason for the surprising absence or scarcity of kala-azar in Sri Lanka. The weak anthropophily of P. argentipes in the Far East may be due to clinal variation. The ascoids on the fourth antennal segment of females, compared with specimens