

TABLE 1
Effect of oral contraceptive on active mitotic rates of onion and garlic

Observations	Two hour		Four hour		Six hour	
	Onion	Garlic	Onion	Garlic	Onion	Garlic
1. Total No. of cells observed	1800	1790	2000	1800	1750	1840
2. No. of metaphases	52	60	40	28	15	14
3. No. of anaphases	20	24	28	21	12	12
4. (M + A)/TC (active mitotic rate)						
(1) Treatment	0.040	0.046	0.035	0.027	0.014	0.008
(2) Control						
(2000 cells for each class)	0.065	0.078	0.059	0.049	0.039	0.021

Bulmer² mentioned that the third type of twinning (other than monozygotic) may arise by the mitotic divisions of an egg before fertilization. It would be surprising if a drug administered with a view to interfere with ovulation might stimulate a mitotic division in an ovum as may be guessed from figures presented here.

The author is indebted to Prof. K. V. Wagh, Department of Gynaecology and obstetrics, G.R. Medical College, Gwalior, for providing oral contraceptive tablets and helpful suggestions.

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March 15, 1977.

* *Lyndoil*: Manufactured by Organon (India) Ltd., Calcutta.

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BROWN RUST—A THREAT TO GRAPE CULTIVATION

In the present communication we are reporting brown rust disease of grapes caused by *Cephaleuros parasiticus* Karst that seriously hinders viticulture in this part of country. Beauty seedless, Cardinal³ and a few unidentified local varieties were found to be affected by the disease. The disease can be seen throughout the

year but for the months of March, April and May. More than 45% humidity in this part of Uttar Pradesh in all other months may be attributed to the presence of disease almost throughout the year. However, the first symptoms of the disease were observed in the month of August.

Cephaleuros, an air borne alga has been reported as an epiphyte or space parasite on leaves and young stems of higher plants from different parts of the country (Bhargava *et al.*^{1,2}; S'feeullah and Govindu⁴; Yadav^{6,7}).

The affected plants of grapevine show small, brown patches (Figs. 1 and 2) in early stage of infection which

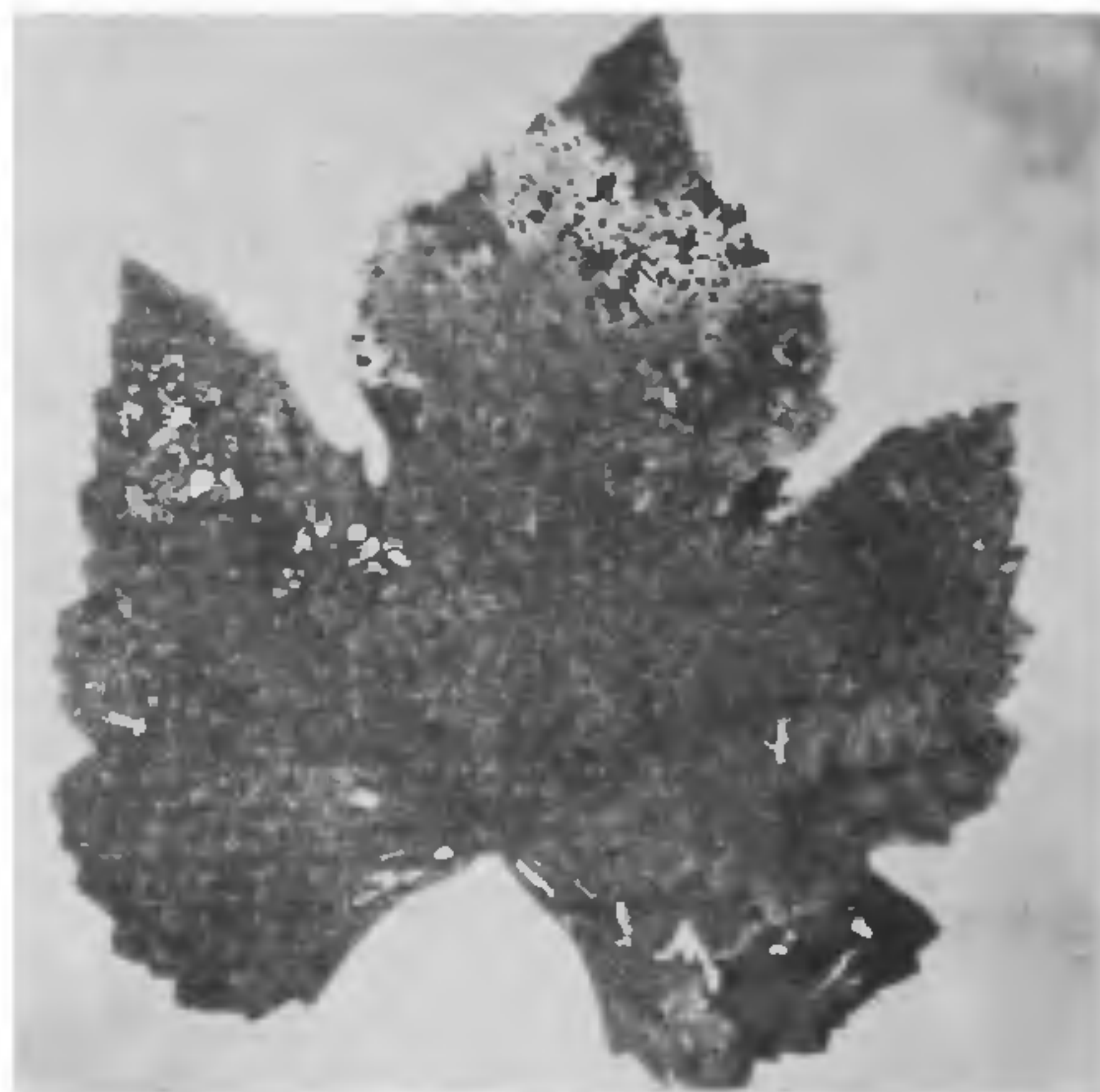


FIG. 1. Infected leaf of grapevine showing numerous small brown patches.

later occupy a large position of the leaf surface. In severe cases when the foliage are heavily covered with algal lesions a tendency of defoliation can be observed.

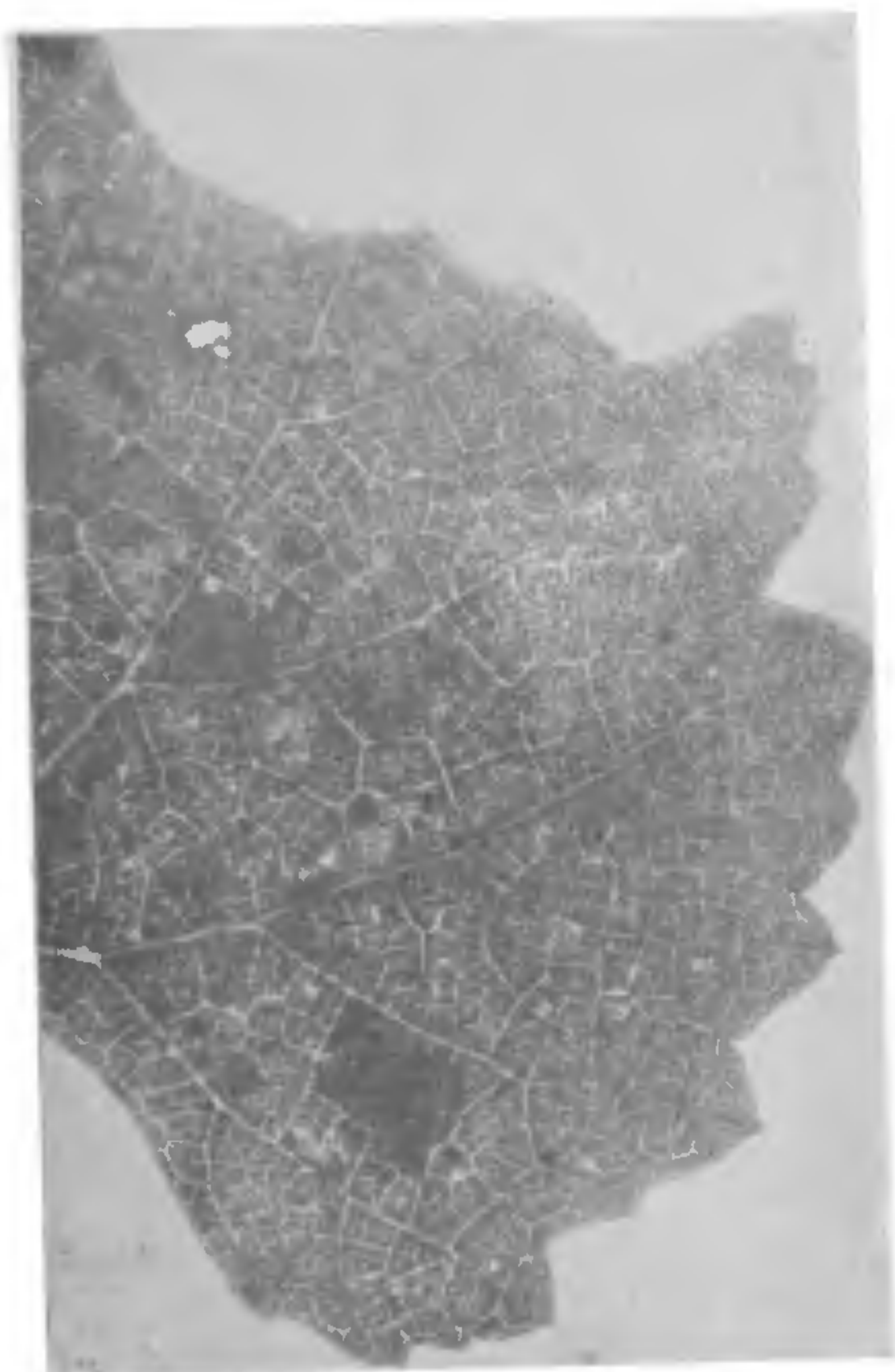


FIG. 2. Enlarged portion of affected grapevine leaf.

Fine hard cut sections were studied to know the host-parasite relationship. The alga was found either wholly external on the epidermal surface of the leaf or partially shrunken in the cuticle. In later stages the alga extends between the cuticle and epidermal cells. The thallus of the alga appears as a disk of radially elongated cells, arising by centrifugal growth and repeated dichotomous division from the germinating spore. In vertical section, it is seen that disk is composed of more than one layer. The haustoria could not be seen as the epidermal cells and parenchyma immediately below the alga were discoloured and dead. Certain cells raised on vertical stalks (sporangiophores) at right angles to the surface became sporangia. The sporangiophores consist of thick, rigid, septate hairs about $350-400\mu$ in length and $45-55\mu$ broad. Each sporangiophore carries 3 to 7 sporangia which are oval, small, averaging about $30-35\mu \times 15-25\mu$. The contents of sporangia segment into numerous zoospores which cause fresh infections.

As the alga covers the leaf surface it disturbs photosynthesis and transpiration and consequently other physiological processes of the host. In an earlier study *Cephaleuros* has been reported to hinder mineral metabolism of mango, guava and sapota (Vidyasekaran and Parambramani⁶). Although this crop has been reported to be affected by fungi, bacteria and viruses from different parts of the world, the report of *Cephaleuros parasiticus* appears to be the first record.

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ON THE OCCURRENCE OF *LERNANTHROPUS KOENIGII* STP. & LUTK. PARASITIC ON *PARASTROMATEUS NIGER* (BLOCH) IN KERALA WATERS

As the original description of *Lernanthropus koenigii* by Steenstrup and Lutken¹ was not sufficiently detailed, Gnanamuthu² gave a fully illustrated description. The present study has shown certain differences between the material before us and Gnanamuthu's description. We, therefore, present a short description.

Lernanthropus koenigii Stp. & Lutk. (Fig. 1, 1-S)

Lernanthropus koenigii, Gnanamuthu, 1950, p. 277, Figs. 19-33.

Body rather plump. Cephalothorax nearly squarish, postero-laterally well rounded and antero-laterally produced into prominent apically rounded lobes. Antennular area convex, nearly a third of the width of the cephalothorax. Anterior division of trunk rather broad, about one and a half times as broad as long, postero-laterally expanded into wing-like lobes. Dorsal plate fully covering posterior part of trunk, nearly equal in length and width, narrowing backwards, with a slight postero-median declivity.

Antennule six-jointed, first joint very stout and armed with a stout sick-shaped scata or spine, third segment longer than second, all segments carrying setae.