A REMARKABLE NORTH AMERICAN SPECIES OF THE GENUS PHAENOCORA.

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With 13 figures in the text.

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On May 29, 1935, Mr. TRENTON K. RUEBUSH, of this laboratory, brought me a large number of Phaenocoras which he had collected from two springs near the Skyline Drive, Rockingham County, Virginia.

On examination, these specimens proved to be of a new species, to which I have taken the liberty of giving the specific name, lutheri, after Professor ALEXANDER LUTHER through whose kindly offices it was made possible for me to publish my recent monograph on the reproductive organs of the genus Phaenocora 1.

The description of this species, which will appear below, was made from 20 serial sections of as many animals, one total mount, and some twenty living animals. All the animals studied, whether sectioned or living, were sexually mature individuals actively engaged in laying eggs. Some of the animals which were sectioned were fixed in HELLEY's fluid and stained with Azur II-Eosin; others were fixed with BEAUCHAMP's fluid and stained with DELAFIELD's haemotoxylin and eosin. The total mount was stained with Azur II-Eosin, and the living specimens were studied under a water-immersion lens.

External Features.

Length of fully extended sexually mature individuals 1.75—2.25 mm. It is, therefore, slightly smaller than Ph. kepneri and larger than Ph. virginiana (GILBERT 1935, pp. 374—376). The shape of the body is quite characteristic, in that the rounded contour of the anterior end flows back gradually to the posterior third of the body where its breadth decreases gradually almost to the end of the body, and then breaks off sharply, and finally forms a blunt tail-papilla (fig. 1). The general color of the body is grayish, with the anterior end rose-colored as far back as the posterior end of the pharynx. The rose-colored anterior end in phaenocoras appears to be a very constant feature and is probably due to oil droplets,

1 The above-mentioned monograph is entitled A comparative study of three new American species of the genus Phaenocora with especial reference to their reproductive organs and their relationships with other described forms of the genus. Acta Zool. Arg. 16, H. 3 (1935). The three new species have been named by me respectively: Ph. virginiana; Ph. kepneri; and Ph. highlandense.
as no pigmentation shows in sections (see Hofsten 1911, p. 40; Gilbert 1935, pp. 298—299). There were no signs of zoochlorellae in any of the specimens studied, but there is no reason why they might not be present under certain conditions. The pharynx is extremely long and slender (fig. 1, ph), immediately anterior to which are two black eyes (e). Outside of the eye pigment, I was unable to find any signs of pigmentation. Pigmentation, however, is a very variable character among phaenocoras and it is possible that these forms might show considerable pigment at some other season of the year. Dermal rhabdites are found of the same type as in Ph. virginiana and Ph. kepneri, and “Stäbchenstrassen” (rs) extend from each side of the base of the pharynx to the „snout“. The genital pore (gp) opens on the ventral surface of the body at a point lying in the mid-line, slightly posterior to the first half of the body, and the “birnförmigen Lappen” (psa₁) can be seen attached to the superior genital atrium (sga), in animals which have been previously cleared by inanition. The female genital canal (fgc) is decidedly urn-shaped in all the specimens which I have studied and is reminiscent of the female genital canal of Vědovský’s (1895, Taf. V, Fig. 39) figure of Ph. typhlops. The bursa intestinalis (bi) is small and the ductus bursa-intestinalis (di) is long and rather slender. The ovary (ov) can be seen at the junction of bursa intestinalis and female genital canal, at which point the yolk duct enters. The ventral yolk glands (yg) anastomose freely and show no sign of their original paired condition, while dorsally, just behind the pharynx, there are paired dorsal yolk glands which are very conspicuous in the living animal, though not prolonged into finger-like lobes as in Ph. highlandense (1935, pp. 299—300), but are aggregated into almost solid masses, which show very little if any signs of lobulation.

The male copulatory organ (co) is of large size and is remarkable in that it not only possesses the usual ductus ejaculatorius (de₄, de), the