

if the rooms be ceiled, otherwise they will drop from above, bringing along with them their noxious prey in the act of contending for victory.

For food they prefer fresh animal, or insectal matter. The larvæ of other insects, and the young of all animals, are obnoxious to them, hence all heaps of rubbish, and hiding places of such prey, when occurring in their route, are carefully explored. Hence, too, the Drivers, when returning from their predatory excursions, afford some of the rarest and finest of the smaller specimens of Entomology.

Newly expressed oils are also favorite articles of food, especially the vegetable, that obtained from the fruit of the *Elais guiniensis*—the Palm oil of commerce.

The Drivers, though often a great annoyance, are not without their uses in the economy of nature. They tend to keep down the rapid increase of noxious insects and smaller reptiles. They consume much dead animal and vegetable matter, which, constantly occurring in tropical climates, vitiates the atmosphere; and, which is not the least important, they compel the inhabitants to observe habits of comparative cleanliness in their dwellings and on their premises, as a filthy town or house is the sure object of frequent visits.

The natives of Africa dread their approach, for being almost naked, wearing a narrow piece of cotton around their loins only, they are the more exposed to their bites; but more especially, say they, "because they deprive us of two things we love most, *poultry and sleep*."

→ On the identity of *Anomma* with *Dorylus*, suggested by specimens which Dr. Savage found together, and transmitted to illustrate his paper on the Driver Ants. By the Committee to which it was referred.

In the letter transmitting his paper on the Driver ants to the Academy, Dr. Savage says, "In the small vial you will find specimens of *rubella*, with three very large individuals, which I consider the perfect insect. Now here is presented an interesting point of investigation, viz., the true relation of these larger individuals to the Driver ants." These specimens afford a solution to a problem which has engaged the attention of entomologists; namely, the relation of the *Dorylides* to the *Formicidæ*, since the large ones alluded to belong to the genus *Dorylus*. They are 13 lines long, and seem to be referrible to *D. nigricans*, and they had cast their wings. There is little to indicate an identity of species between them and *rubella*, as these want the holosericeous surfaces. The color and texture of the head and mandibles agree, however, and the medial and posterior coxæ present a narrow excavation superiorly (for the reception of the femora when elevated,) in place of the conspicuous cup-shaped one in the corresponding limbs of the male. The mandibles in this sex are slender and have the apex incurved, but not falcate, and they are without teeth. The femora are extremely compressed, and the abdominal peduncle is about as wide as the succeeding segment.

There are two forms, both of *arcens* and *rubella*, one of which includes the largest individuals, the mandibles of which are armed with one abrupt, erect medial tooth; the other and more abundant form is variable in size, and the mandibles have two slender teeth directed forwards. The labial organs and maxillæ are alike in both forms of both species. These organs cannot be compared in '*Dorylus*,' because, with the mouth, they are entirely wanting: the margins of the labium and labrum being solidly united.

The circumstances attending the capture of these insects are thus stated by Dr. Savage.

"In the month of April, 1847, I visited the mission of the Am. Board Com. For Miss., at Gaboon, 15' north of the equator. Walking out at 7 o'clock on a cloudy morning, I saw a column of red drivers crossing the path. They consisted of two lines, as is always the case, one going, the other returning to their domicile. I stopped some time to compare them with the black species which abounds at Cape Palmas and that part of the west coast generally. They were not as numerous nor as large as *arcens*, but equally ferocious and offensive. Their arrangements and movements were the same. I soon discovered within the lines the large insects in question. I was here taken by surprise, as I had observed nothing like them in the economy of the Black drivers. The first idea presented to my mind was, that they were captives, but on observing further, they seemed to be no unimportant members of the community. Within a distance of about two rods I discovered ten of this class. I was soon convinced that they belonged to the drivers, and proceeded to test the truth of the conclusion. I took one or two from the lines to a distance of six and ten feet. They seemed at once to miss their companions, and manifested great trepidation, and made continuous efforts to find a way of return. At last they reached the lines and instantly resumed their places, displaying at the same time decided gratification. Nor were the lines thrown into any confusion by their entrance, as they would most surely have been in case of a foreign insect or body. On further watching their motions, I perceived that they did not continue on with the drivers, but after going a certain distance returned. This they repeated, going and returning. What office they performed I could not discover. My time was limited, not permitting me to trace them to their domicile. It was with regret that I left them; but from the observations made, it was evident that they were members of the driver community. I cannot doubt that they are the perfect state of the insect. Several natives recognized them as insects that flew about, and into their houses at night. This is altogether probable when they first attain their winged state. Similar insects closely allied to *Dorylus*, it is known, fly at night into houses at Cape Palmas, undoubtedly bearing the same relation to *arcens* or the Black driver."

The facts here stated are sufficient evidence that *Anomma Shuckhard* 1840, is another condition of *Dorylus* Latr. 1802, which must take its place among the Formicidæ, agreeably to the views of St. Fargeau. For the sake of convenient reference, we may, with Dr. Savage, regard the larger form of the drivers (*Anomma*) as *soldiers*, the intermediate ones as *workers*, and the smallest as *carriers*.

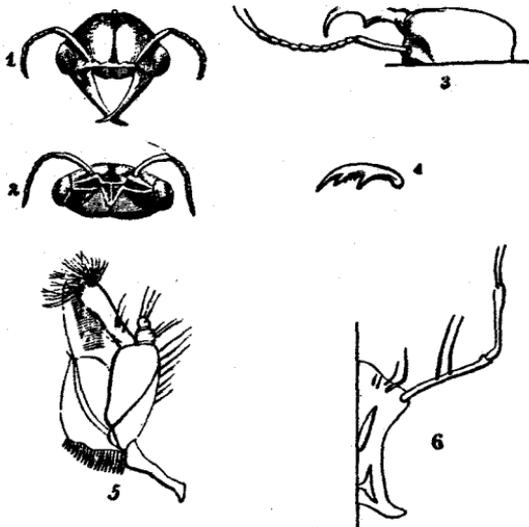
In the same manner, Shuckhard's view of the identity of *Typhlopone* with *Labidus* is rendered probable, which would require the latter to be placed in the Formicidæ, to which Mr. Westwood has shown that *Typhlopone* belongs. Thus not only will *Anomma* and *Typhlopone* be superseded, but the supposed family of the *Dorylidæ* will be suppressed.*

**Typhlopone pallipes* Hald., 1844, Proceed. Acad. 2, 54, does not belong to this genus, but rather to *Amblyopone* Er., Arch. Naturg., 1842, p. 260, pl. 5, fig. 7: with the characters of which it agrees, except that the mandibles are toothed from end to end, and the antennæ are 12-articulate, instead of 11 as required by his text, although his figure represents 12. The eyes are visible, although small and indistinct.

The chief question remaining to be disposed of relates to the female. The thorax of the soldiers presents no observable alar cicatrices, and as they are anomalous in their small size when compared with the male *Dorylus*, we must search for the normal female in some large unrecognized form.

The specimens named *rubella*, although distinct from *arcens*, resemble it very closely, even to the details of the oral organs. The form of the labium, as determined by a careful dissection, does not agree with Mr. Westwood's figure. His representation of the maxilla (in which he has omitted the mando and gales) is more accurate. Both species have a posterior lateral spine on the thorax, and a compressed sharp spine directed backwards and placed along the middle of the abdominal peduncle, which has also a small lateral tubercle. In *rubella* the sternum is carinated, and has a spine upon each side of the carina, between the medial coxæ. The head is rather less contracted posteriorly than in *arcens*. The general similarity is sufficiently great to make the two species congeneric; and if *Dorylus nigricans* is taken as the male of *rubella*, it will be difficult to assign a male to *arcens* from among the described species of *Dorylus*. The abdominal peduncle of *arcens* is slightly smaller than in *rubella*, whilst the insect is rather larger, so that a *Dorylus* with a small peduncle may be the corresponding male: and among these *D. glabratus* *Shk.* might be chosen, as it is larger than *nigricans*. There is, however, too much discrepancy in the color to admit such a conclusion without hesitation, *arcens* being black. We are, therefore, inclined to regard *Dorylus arcens* as a black species with a large peduncle, yet to be discovered as a male. The last character is possessed by *D. planiceps* *Hald.*, which, although taken at Cape Palmas by Dr. Savage, is too small to correspond with *arcens*, and its color is lighter than in *nigricans*.

Dr. Goheen brought specimens of *rubella* from Monrovia, a locality 1500 miles distant from that specified by Dr. Savage.



Explanation of the figures.

Fig. 1, 2, head of *Dorylus nigricans*, the latter having the mandibles removed to show the absence of the mouth: 3, half of the head of a soldier: 4, mandible of a worker: 5, maxilla, and 6, half the labium, from a soldier of *rubella*; all magnified.