

XLIII. *On some Doubts respecting the Æconomy of Ants.*
By the Rev. F. W. HOPE.

[Read 7th February, 1837.]

THE word which in our translation of the Bible is termed "Ant," is in Hebrew called *Nemala*, in Greek *Myrmex*, in Latin *Formica*, and in the Turkish and Arabic languages *Neml*. In the *Proverbs* (chap. vi. ver. 6, and chap. xxx. ver. 25) the sluggard is directed to go to the ant, "and consider her ways;" and in a second passage we are told that "they prepare their meat in the summer." Now that the ancients believed that ants hoarded up grains of corn will, I think, be generally admitted; that they hoarded them up against the winter, or that they hoard at all, is denied by some modern Entomologists. That ants hoarded up grains as winter store, there is not the slightest intimation that I can find in any part of the Bible; and we may ask, Whence then has the opinion originated? Probably with other writers. Let us for a moment refer to the poets of antiquity; they will assist us to solve the question. In Virgil we find that his opinion of their instinct amounted nearly to reason, where he states (*vide* *Geor.* I. v. 184) in the *Georgics*—"inopi metuens formica se-nectæ." In the fourth *Æneid*, line 402, he mentions that the grain was hoarded up against the winter.

"veluti ingentem formicæ farris acervum
 Quum populant, hiemis memores tectisque reponunt."

The well-known passage in the *Satires* of Horace is somewhat in accordance with the above.*

If, in addition to the above quotations, any individual doubts that the ant is provident, let him consult the third volume of the *Hicozoicon*, where the learned and indefatigable Bochart cites a host of authors, all concurring in the same opinion. Indeed, so

- "sicut
 Parvula (nam exemplo est) magni formica laboris
 Ore trahit, quodcunque potest, atque addit acervo
 Quem struit, haud ignara ac non incauta futuri.
 Quæ, simul inversum contristat Aquarius annum,
 Non usquam prorepat, et illis utitur antè
 Quæsitis sapiens."—*Vide Sat. I. lib. i. ver. 33.*

Hesiod, among the early Greek writers, called the ant *Idris*; that is, *wise*. Sopheanus, an Arabian author, gives us also the following passage: "Nullum animal cibum recondit præter hominem, *formicam*, et murem;" and Poli, in his *Synopsis*, adds—"sed mus ad breve tempus recondit, sola *formica* in annum unum et plures."

numerous are the authors quoted, that it does appear to me somewhat remarkable, that the fact of ants hoarding up grain was ever a disputed point. I shall only allude at present to one passage, in the works of Sir William Jones, which agrees with those of the other authors already mentioned. He states, "Never shall I forget the couplet of Firdausi, for which Sadi, who cites it with applause, pours blessings on his departed spirit.

‘ Ah ! spare yon *Emmet*, rich in hoarded grain,
He lives with pleasure, and he dies with pain.’ ”*

From the above writers it will appear then, that the notion of ants hoarding up grain was entertained in Asia and Europe ; and if any person is still disposed to question this point, let him explain away, if possible, the statement of Colonel Sykes respecting *Atta providens*, which is published in an early number of our Entomological Transactions. As the first inquiry is then disposed of, viz. that the ant is a provident insect, let us next examine if Virgil's opinion is correct, "That ants hoard up grains against the winter." Now if Colonel Sykes is accurate in his statements, and he can scarcely be otherwise, for he has specimens of the seeds he saw the ants bringing up from below, to the heap on the surface of the earth, specimens of the grass producing the seed, and he wrote down in his diary the same day the facts as he had witnessed them, I think it will be seen at once that his facts tend to confirm the opinion of the ancients, that ants provide against a season of need, call it winter, or any other season. The statement from the Transactions is nearly as follows :—"The grass seeds were treasured up by the ants before the rains commenced ; they were probably injured by the wet, and the ants were busily occupied in exposing them to the influence of the sun." It appears then that that *measure* which in one country was attributed to the ants as precautionary against cold, may, with equal justice, in another clime be applied to the influence of the rains during the monsoon. So little is known respecting the œconomy of our indigenous insects, and even less regarding exotic species, that it would be rash to hazard a decided opinion concerning them. And it will be borne in mind (as we find to be the case amongst some species of birds and mammalia) that a habit which characterizes a species in a particular climate, is no longer the characteristic of that species in a different climate. The same species of animal that hybernates in extra tropical climates no longer does so within the tropics. It will be borne in mind, also, that in the great family of the ants, the species of some genera may

* Vide Works of Sir William Jones, vol. i. p. 153.

have a provident instinct, and others be destitute of it. With a view of inviting inquiry and investigation on the statement before us, I have drawn up a few queries, which, if satisfactorily answered, may tend to remove all difficulties, and settle a long disputed point.

- 1st. What is the general food of our European ants ?
- 2dly. What is the food of the *Atta providens* and other species of Asia ?
- 3dly. Do exotic ants, particularly those of the genus *Atta*, derive any sustenance from *Aphides* ? If not, the *œconomy* of the races are distinct, and it is probable that the hoarded grains are their usual food.
- 4thly. Do the ants of tropical countries become torpid during any part of the year ? Probably not.

In concluding these observations, I have only to add, that I think it probable that the ant, of which Solomon has made mention, belongs to the genus *Atta*; and if at present or at any future time this point can be settled, the most appropriate name would be *Atta Solomonis*.*

* Since the above remarks were written, I have met with a passage in Meer Hassan Ali's History of the Mussulmauns, giving an account of a species of red ant which stores up grain. It is as follows:—"More industrious little creatures cannot exist than the small red ants, which are so abundant in India; I have watched them at their labours for hours, without tiring; they are so small that from eight to twelve in number labour with great difficulty to convey a grain of *wheat* or *barley*, yet these are not more than half the size of a grain of English wheat. I have known them to carry one of these grains to their nest, at a distance from 600 to 1000 yards; they travel in two distinct lines over rough or smooth ground, as it may happen, even up and down steps, at one regular pace. The returning unladen ants invariably salute the burthened ones, who are making their way to the general storehouse, but it is done so promptly that the line is neither broken, nor their progress impeded by the salutation. The natives tell me these little pests will feed on the human body if they are not disturbed; when any one is sick there is always great anxiety to keep them away."—Vide vol. ii. p. 99. Wherever the red ants colonize, prosperity attends (as is the common opinion) the owners of that house. They destroy the white ants, though the difference in their size is as a grain of sand to a barley-corn, and on that account only may be viewed rather as friends than enemies to man, provided by the same divine Source from whence all other benefits proceed. Vide Meer Hassan Ali's History of the Mussulmauns, p. 102.