Ants are very cleanly, and assist one another in this respect. They are often seen licking one another, and those which Sir John Lubbock marked with paint, for the purpose of identification, were gradually cleaned by their friends. Those, too, which die in the nest, are always carried outside, and in the cases observed by Sir John Lubbock, were generally thrown into the moat surrounding his apparatus.

As to their friendly feelings towards each other, it is shown to a different degree by different ants, for, like men, they differ in individual character. Of course, in carrying on their ordinary avocations, they act together with great harmony, but it is in exceptional circumstances that their real character in this respect is revealed. In the case of sick or disabled ants, he has observed, on several occasions, that they were carefully nursed and guarded; while on others, their friends acted more like the Prieşt and the Levite than the Good Samaritan. Even in the case of ants who had got drunk (not voluntarily, however), their friends picked them up and carried them to the nest to sleep off their potations. But if these intoxicated ants were strangers, they were thrown into the water. Indeed, the experiments proved that though their friendship for each other is strong, their hatred to their enemics is still stronger, for they were willing to leave friends in confinement, if they could only get at stranger ants and maltreat them. No doubt this must be vregarded as a blemish in their character.

## SENSES-SIGHT, HEARING AND SMELLING.

As regards vision, the species of ants are very differently endowed. Some have apwards of a thousand facets in their eyes, others less, some *Ecitons* only one. Some species are entirely blind. One of these, *Ponera contracta*, is found in England. Besides the compound eyes, many species are furnished with simple eyes (ocelli) on the top of the head.

Whether each facet in an insect's eye acts as a separate organ, or only a part of the object is seen by it, is a question not yet decided by entomologists. The latter, however, is the prevailing opinion, in which Sir John Lubbock, who has made many observations on the vision of ants, is disposed to coincide. "If," he says, "the male of Formica pratensis, for example, sees 1,000 queens when only one is really present, it would seem to be rather a bewildering privilege." Still, if we do not know how they see, we know that they do see, and by taking advantage of their dislike to light in their nests, he found that they were susceptible to colour, and prefer some to others. By placing strips of violet, red, green and vellow glass over their nests, he discovered that they preferred the green and yellow, and particularly avoided being under the violet, and after many elaborate experiments with the magnesium light, the spectra of different substances, etc., he concludes that they have an aversion to that colour, and even that they are very sensitive to the ultra-violet rays of the spectrum, which our eyes cannot perceive. This he considers a very interesting discovery, making it probable that these rays appear to ants as a distinct and separate colour (of which we can form no idea), as unlike the rest as red is from yellow; and that, as light appears to them composed of not only the rays which we see, but of those of the ultra-violet, the general aspect of nature must, as regards colour, present to them a very different appearance from what it does to us.

None of the experiments he tried could prove to him that ants had the power of hearing. Tuning forks, penny pipes, shrill whistles, a fiddle, or the most piercing and startling sounds he could produce, had not the slightest effect upon them. Still, he thinks that they may be capable of hearing sounds which we cannot distinguish. In the terminal joint of the antennae of ants there are several curious struc-



Fig. 22. Terminal portion of antenna of Myrmica ruginodis; E, "cork-shaped" organs. S, opening of "stethescope" on surface. T, tube. W, inner chamber. N, nerve. (From Lubbock.)

tures, which seem to be auditory organs. They are of two kinds, one a cork-shaped organ. opening on the outer surface of the antenna. The other kind is in the form of a stethes-cope, (see Fig. 22) with an outer sac (s) a long tube (t), and a posterior chamber (w) to which is given a nerve (n).

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The ants of the species catal-United States pe Canada.

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F. hercules

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F. Mellea (Prounder stones.

F. fusca, (Linn nests under stones,

