the cephalo-thorax and abdomen as in *Steatoda,* one of the *Theridiidae* and *Cambridgea,* one of the *Agalenidae.* It is believed that the males of these species signal to their females by means of the sound these organs emit. The greatest disparity in size between the sexes is met with in the tropical genus *Nephila,* the females of which are gigantic representatives of the *Argyopidae.* The male, however, is a veritable pigmy beside the female, and during copulation presents the appearance of a parasite attached to her abdomen. It has been suggested that the diminutive size of the male is of great advantage to him during courtship, because he is enabled to move easily thereby to escape from her clutches should she turn upon him with hostile intent.

All spiders possess a pair of poison-glands, one in each of the chelicerae or mandibles and opening by means of a duct at the tip of the fang. The primary function of this poison is to kill the prey upon which they feed, its action being very rapid upon insects. In a great majority of cases, however, it is comparatively innocuous to human beings, despite legends to the contrary that have arisen in connexion with certain species like the tarantula. The bite, however, of any spider, strong enough to pierce the skin, may give rise to a certain amount of local inflam- mation and pain depending principally upon the amount of poison injected. The bite, for example, of large species of the family *Aviculariidae,* sometimes called Mygales, and sometimes, but erroneously, known as tarantulas, species which have fangs half an inch long and as sharp as needles and a considerable quantity of poison, may be very painful, though seldom serious provided the health of the patient be good. There is one possible exception, however, to the innocuous nature of the poison and this is supplied by the species of the genus *Lathrodectus,* one of the *Theridiidae.* There is no actual proof that this spider is more poisonous than others, but it is a significant fact that its species, inhabiting countries as widely separated as Chile, Madagascar, Australia, New Zealand and South Europe are held in great fear by the indigenous population, and many stories are current of serious or fatal results following their bites. Many of the species of these spiders, moreover, are very conspicuously coloured, being either wholly black or black relieved by fiery red spots, forcibly suggesting that they are warningly coloured. Some of the species of *Aυiculariidae* also appear to be warningly coloured with black or black and red, and their colora­tion is associated with the urticating nature of their bristles, which makes them highly unpalatable to vertebrate foes. So far as is known, however, only the large spiders belonging to this group possess this special means of defence, and in many other species this is accompanied by highly-developed stridu- lating organs resembling those of rattlesnakes and scorpions in function. Others again, like *Gasteracantha* and *Acrosoma,* belonging to the *Argyopidae,* are armed with sharp and strong abdominal spines, and these spiders are hard-shelled like beetles and are spotted with black on a reddish or yellow ground, their spines shining with steel-blue lustre. The majority of spiders, however, are soft-skinned and succulent, and are tasty morsels for insectivorous reptiles, birds and mammals. Hence as a very general rule the coloration makes for concealment under natural conditions of existence, and the instincts which lead to concealment are very highly developed. As instances of procryptic or celative coloration may be mentioned that of the species of the genus *Dolomedes,* one of the *Lycosidäe,* which fives amongst reeds and is marked with a pair of longitudinal yellow lines which harmonize with the upright stalks of the vegetation, and *Lycosa picta,* which lives on the sand, can scarcely be seen on account of its mottled pattern: *Sparassus smargdulus* and the species of *Pecucetia,* which are found amongst grass or low green herbage, are mostly green in colour, and *Salticus scenicus* is banded with white and black to match the grey tint of the rocks and stone walls on which it hunts its prey. Similar instances of protective colora- tion could be cited without end. Sometimes the shape of the spider combines with the colour to produce the same effect, as in the species of *Uloborus,* which as they hang in thin shabby-looking webs exactly resemble fragments of wind-blown rubbish. The success of procryptic coloration depends, however, very largely upon stillness, and the instinct to keep stationary without moving a limb is a marked characteristic of all spiders unless engaged in hunting or fleeing from imminent danger. The instinct reaches its highest development in the phenomenon miscalled “ death feigning.” Spiders of various families will, when alarmed, lie absolutely still with legs tucked up and allow themselves to be pushed and rolled, and handled in various ways without betraying that they are alive by the slightest movement. But it would be absurd to suppose that they are in reality pretending to be dead, because there is no reason to think they can have any knowledge of death. They are merely practising the inherited instinct to lie motionless, movement being the only indication of the presence of living prey known to many insectivorous animals. When concealment is no longer possible terrestrial species, like the *Lycosidae,* dart swiftly to the nearest shelter afforded by crevices in the soil, stones, fallen leaves or logs of wood, while those that live in bushes, like the *Argyopidae,* drop straight to the ground and lie hidden in the earth or in the fallen vegetation beneath.

The extent to which procryptic coloration and instincts favouring concealment are developed indicates that generation after generation spiders have been subjected to persecution from enemies. No doubt large numbers are devoured by insectivorous birds, mammals and reptiles, but the mortality due to them and other foes sinks into insignificance beside that caused by the persecution of hymenopterous insects of the famines *Ichneumonidae* and *Pompilidae,* especially of the latter, many species of which systematically ransack the country for spiders wherewith to feed their young in the breeding season. It is no exaggeration to say that countless thousands of spiders of all families are annually destroyed by these insects, and there is no reason to doubt that destruction on at least as great a scale has been going on for centuries, too many even to guess at. Hence it is probable that no factor has had a greater influence than these wasps in moulding the protective instincts and habits of spiders. One interesting phenomenon in spider-life seems to be directly and certainly traceable to this influence, and that is mimicry of ants. In several families of spiders, but principally in those like the *Clubionidae* and *Salticidae,* which are terrestrial in habits, there are species which not only live amongst ants, but so closely resemble them in their shape, size, colour and actions that it requires a practised eye to distinguish the Arachnid from the insect. Now the *Pompilidae* or mason wasps provision their cells with insects of many different kinds, as well as with spiders; but, of the hundreds of species of these wasps that have been described from different parts of the world, only one is known to use ants for this purpose; and this species is not one that preys upon spiders. On the other hand it has been specially recorded of two of the species of spider-destroyers that they have great dislike and apparent fear of these little poisonous Hymenoptera. So, too, does it appear that ants are entirely immune to the attacks of *Ichneumonidae,* which destroy hosts of other insects and of spiders by laying their eggs upon their bodies. But since ants are not persecuted by these two families of Hymeno- ptera, the greatest enemies spiders have to contend with, it is evident that mimicry of ants is of supreme advantage to spiders. Ants, however, are not the only animals mimicked by spiders. Some members of the *Argyopidae (Cyclosa)* are exactly like small snails; others *(Cyrtarachnd)* resemble *Coccinellidae* in shape and colour. Now, *Coccincllidae* (ladybirds) are known to be highly distasteful to most insectivorous mammals and birds, and snails would be quite unfit food for the Pompilid or Ichneumonid larvae, so that the reason for the mimicry in these cases is also perfectly clear. The exact extent, however, to which each particular class of enemy has affected the protective habits and attributes of spiders is by no means always evident; and it is impossible to discuss the question in detail within the limits of a short article. But two instances of extreme deviation from the ordinary mode of life due, apparently, like ant-mimicry, solely, if not wholly, to the persecution of Hymenoptera, may be cited as illustrations of the profound effect upon habit brought about by long-continued persecution from enemies of this kind.