

latter), which are color-loving insects, and which hunt by sight mainly, always during the hours of sunlight. The night lychnis, on the other hand, has white blossoms, opening in the evening, and faintly scented with a vague but pleasant perfume. It is specialized for fertilization by moths, which fly at night, and which have sight not adapted to the perception of color. Mr. B. T. Lowne has made some interesting microscopical studies of insects' eyes, and has shown that the eyes of moths correspond to those of owls among birds, in the absence of certain nervous elements supposed to be the organs of the color sense; while the eyes of bees and butterflies correspond to those of day birds in the presence of such organs. In fact, it is clear that a color sense would be of little use to nocturnal or crepuscular animals, because the amount of light in the evening is seldom sufficient to show up the distinctive colors of different objects.

Hence almost all the flowers which appeal specially to the moths are either white or pale yellow—good reflectors in the twilight or moonlight—and they are invariably scented, sometimes very strongly. Many of these white and perfumed night blossoms are great favorites in our gardens and conservatories—for example, jasmine, stephanotis, tuberose and night-flowering cereus. Some of them actually close up during the day, and most of them emit their perfume only in the evening, when the moths on which they depend for fertilization are abroad. Moths, indeed, hunt mostly by smell, though they are also partly guided by sight, and perhaps even in part by the faint phosphorescence, hardly visible to human eyes, which, as the daughter of the great Linnæus first observed, plays lambent over certain of their favorite blossoms in the early shades of night. I have seen this phosphorescence myself (or fancied I saw it) on the petals of the evening primrose; but only a few people have weak enough vision to detect it, for, like negative images, it

cannot be seen by persons of robust and vigorous sight. Women and artists perceive it oftener than men of science, which no doubt tells rather hardly against its objective reality. Yet perhaps they and the moths can see some things which are hidden from the wise and learned; at least, I like to believe so, and to persuade myself that I, too, am in this matter on the side of the poets.

The differences between the two champions, to return once more to solid science, form a very instructive study in the origin and growth of specific distinctions. In most points the two plants are absolutely alike, and even the technical botanists, who never miss a chance of manufacturing a new species where possible, admit that they are perhaps mere varieties of a single form. But then these varieties, especially when so markedly dependent upon difference in function, are nothing less than new species in the making. They are nascent stages of fresh types. An accidental variety of leaf or flower, like the monstrosities which we cultivate in our gardens, means, as a rule, very little indeed, because it is not correlated with any need or habit of the plant. It affords no material upon which natural selection can work. But a variety like the white champion has of course a distinct meaning, and is itself already the product of much selective action. That the white form, not the red one, is the divergent variety, we may infer from several peculiarities, notably from the fact that most of the lychnis tribe have pink flowers, and that no other British species has white ones.

Suppose, however, that some of these pink champions take (at first by some accident) to opening at night, then they may perhaps chance to attract the eyes of some passing moth, and so to get fertilized by the insect in its search for honey carrying the pollen from head to head. Thus a second generation of night-flowering champions would be set up, still with bright pink blossoms. But the color of petals is always more or less vari-