DISCUSSION AND CORRESPONDENCE

ON THE INHERITANCE OF ANILINE DYE

In one of the German magazines I have found a short account of Dr. Riddle's work, "On the Inheritance of Aniline Dye," published in SCIENCE. Dr. Riddle showed that the yolks and embryos of the eggs laid by hens which were fed with the dye Sudan III. were colored. As in the account the remark is made that since the year 1896, when an Italian, Daddi, discovered that Sudan III., given as nourishment, possesses a staining power, no one has undertaken any further experiments upon animals with this dye, I should like to state that my experiments carried out in Professor Dr. Hoyer's laboratory, and entitled, "Contribution à la biologie des teignes," were already published in the year 1905 in the "Bulletin intern. de l'Academie des Sciences de Cracovie, 1905."

Giving wool together with the dye Sudan III. as food to the caterpillars of a certain moth (*Tineola biselliolla* Hummel), I caused their bodies to be colored red. Their adipose tissue was the most intensely stained. The larvæ thus colored undergo normal metamorphosis, the pupæ and also the butterflies produced from them continue to preserve the typical red color of Sudan. The tinge of the head, thorax, abdomen and limbs of a butterfly may be easily seen with the naked eye beneath the scales covering the body. In general this coloring makes its appearance where adipose tissue is present. There is also an accumulation of dye in the female's ovary. In the cells surrounding an egg there are seen small drops of fat stained with Sudan. The eggs laid afterwards look reddish and the drops of fat contained in them have the very characteristic color of Sudan. Thus, by feeding the larvæ of one generation with Sudan, I obtained all the stages of development of the moth colored with the same dye, and this dye was later transferred into the reproductive cells of the same generation. From all this we may conclude that the reserve material accumulated by a larva in the form of fat serves not only for one stage of development, but is also transferred almost without change and is of use in the further development of the insect. Besides, the dye, introduced into the organism of an individual as a material admixture, is transmitted by means of the reproductive cells to the offspring and in this manner it may be inherited.

In later researches, the results of which are not yet published, I have proved that larvæ, hatched from eggs colored with Sudan, possess its special tinge of red. I have also succeeded in obtaining similar results, when using a series of dyes of different colors, *e. g.*, blue, and in experimenting with different kinds of butterflies and other insects.

Ludwik Sitowski

NON-FRUITING OF JAPAN PERSIMMONS DUE TO LACK OF POLLEN

Since its introduction in the seventies, the Japan persimmon has received a considerable amount of attention from growers and investigators. Its culture has gradually increased until it is now cultivated to a greater or less extent over a fairly wide area, a section corresponding roughly with that in which cotton can be produced.

Complaint has many times been made that the Japan persimmon does not hold its fruit, that it blooms profusely, but the young fruits drop off shortly after the flowering period is past; in fact, at this time, each season, the ground under large trees is often literally covered with the calyces and ovaries of the plant. At harvest time, either not a single fruit remains or only a few scattered specimens on trees which should have borne bushels of luscious fruit.

Various reasons have been given for this phenomenon, such as lack of necessary food supply, lack of moisture or uncongenial soils, and the remedies suggested and most frequently put into effect have been more frequent cultivation, no cultivation at all and heavy applications of fertilizers, particularly potash; but in spite of all these, the Japan persimmon has continued to behave in much the same way, some varieties holding a fair crop, others none, bearing one year and not another. There has always been something