By such concentration of effort, and by such alone, can the departments of botany in agricultural colleges put themselves in position to answer the demands for botanical knowledge that will be made upon them. By such attention to plants, not as crops and as a part of an industry, but as part of a wide world's life, can they properly supplement the practical knowledge of departments of agronomy. By working separately and together, each in its well-defined sphere, can departments of botany and departments of agronomy in agricultural colleges contribute to the people and to the industry of agriculture, such science and such practise as will entitle their institutions to an honored place in future collegiate life.

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SOME NOTES ON ALBINISM

THIS journal has recently[1] briefly recorded some observation of albinos which recall some chance observations of the writer.

In the late "eighties" or early "nineties" when the English sparrow first became common and abundant near Franklin, Indiana, the writer, as a boy, was much impressed by seeing a white English sparrow. The albino, as well as two or more partial albinos, was repeatedly seen during the latter part of one summer in a large flock of the birds which lived about the barn on the home farm. During the same or a subsequent season there occurred one or more of the partial albinos in a large flock of the sparrows on an adjoining farm. Three or four years ago a female English sparrow pied on one wing and a portion of the back was frequently observed at Cold Spring Harbor.

Within two or three years of the time when the albino English sparrows were seen in Indiana a white fox squirrel was frequently seen in the same neighborhood. The writer saw it only once momentarily and at some distance, but other members of the family saw it and a brother examined it after it was shot by a neighbor. It was white except for the tail, which was characteristically gray. The writer is under the impression that he was told that the eyes were "red," but can not vouch for that statement, although it is apparently a fairly safe inference that they were pink.

Near Oswego, Indiana (in 1903 or 1904), was seen an albino robin. It was not a clean white, but was tinged a slightly brownish or dirty hue. The bird was clearly seen at fairly close range and its identification could not have been mistaken.

In 1909 a family of gray squirrels, attracted by the abundant supplies of nuts, etc., proffered them, nested in a tree in the yard near a house in the edge of the town of Marietta, Ohio. One of the squirrels, the male, was a complete albino. Three of the young were albinos and one was a normally pigmented individual. The mother was accidentally killed and the young died. The following season an albino young one was captured and was kept in captivity until maturity. It was a pure albino with white hair and characteristic pink eyes. In all to the present time there are said to have been eleven albino squirrels known in that locality.

In 1907 while collecting the common aquatic isopod, *Asellus communis,* in a spring stream at Arlington, Mass., I found a number of pure albinos. The albinos were fairly abundant, there being perhaps one albino to eight or ten of the normally pigmented individuals. In January, 1910, and again in 1911 albino *Asellus* were found at the same spring.

In a small artificial pond in the Catskill Mountains last October the writer saw what he confidently believes to have been an albino newt, *Diemyctylus viridescens.* The animal was near the edge of the pool and escaped into deep water. It could not be located on subsequent visits to the pond, only a portion of whose margin was readily accessible for observation. The individual was pairing when seen and was apparently a female. There were many newts in the pond, on some of which the black pigment was not very conspicuous, but this one appeared so distinctly a clear uniform light orange yellow that its identification as an albino seemed fairly safe. It appeared very much to resemble in general body color an albinic or xanthic specimen of

[1] O'Gara, January 1; Hargitt, February 12, 1915.

the salamander, *Spelerpes bilineatus*, recently kept for several months at this laboratory.

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Albinism in the English Sparrow

The notes on albinism in the English sparrow (*Passer domesticus*) appearing in Science of January 1 and February 12 suggest the desirability of placing on record certain similar observations made by the present writer. While residing in Chicago, from June, 1904, to May, 1908, I noted English sparrows showing partial albinism in the streets on many occasions. The extent of the white markings on these birds varied from a few feathers to perhaps a third or a fourth of the whole bird, no pure white individual being seen. The striking feature of the occurrence of these white marked birds was their abundance in the late summer and early fall of each year. At that season partial albinos were seen at least several times a week, sometimes daily for three or four days. By early spring these abnormal birds had disappeared; at any rate I have no notes regarding their observation at that time of the year. From these facts it would seem as though the numerous white-spotted birds seen in the fall were immatures of the previous summer. Also for some reason, perhaps connected with their conspicuous appearance, but few of them survived until the beginning of the following breeding season.

The common appearance of partial albinism in the English sparrow in a country where it has been recently introduced through human agency, as compared with the rarity of this phenomenon among most native birds, is suggestive of this being in some way an outcome of unusual conditions surrounding the species in its adopted home. In the absence of data regarding the sparrow in its native land, however, this is mere speculation.

Observations along the same line regarding another species of bird may have some significance. In southern California the Brewer blackbird (*Euphagus cyanocephalus*) has taken most kindly to the altered conditions brought about by settlement of the country, breeding in the shrubbery of parks and gardens, and feeding on the lawns throughout the towns. In Exposition Park, Los Angeles, the broad stretches of lawn have been particularly attractive to these grackles, and, especially in the fall, they gather here in large flocks. Partial albinism among these birds, just as with the English sparrows seen about Chicago, is of common occurrence in the late summer and fall, on several occasions two or even three white-spotted birds being in sight at the same time. The white areas of the birds observed were always of small size. None of these abnormal individuals has been noted in the spring. The question again suggests itself as to whether these grackles are not affected by something in the altered environment, the changed conditions having been obviously most favorable to the species and conducive to great increase in numbers.

In this connection, however, it is interesting to note that still another bird, the house finch (*Carpodacus mexicanus frontalis*), which has so adapted itself to urban conditions as practically to occupy in the towns of the southwest the position held elsewhere by the English sparrow, in all its vastly increased numbers shows no tendency toward albinism, at any rate no more than any other native bird.

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To the Editor of Science: On page 26 of the current volume of Science Mr. P. J. O'Gara asks for information regarding albinism among English sparrows. I have frequently seen nearly white specimens, especially in New York City, but never any that were entirely white. I believe that albinism occurs more frequently in this species than in any other, because the natural enemies that pick off the conspicuous individuals of other species do not dare to molest the sparrows in their close proximity to man. Thus individuals with albinistic tendencies are enabled to breed and these tendencies are transmitted to their offspring. Maunsell Schieffelin Crosby