chromosomes in hybrids between wild American species and *G. sturtii*. In addition, hybrids between *Thurberia thespesioides* (a plant closely allied to Gossypium), $n=13$, and *G. sturtii* have been found to exhibit 26 single chromosomes at first metaphase.

These new findings indicate that the cultivated American cottons are of allopolyploid[3] rather than of autopolyploid nature.[4]

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TOXICITY OF CADMIUM TO CHEWING INSECTS[1]

WHILE testing the insecticidal properties of various phosphates, the writer found that cadmium phosphate possesses appreciable toxicity to silk-moth larvae (the insect generally used in our laboratory for testing stomach poisons). Since none of the other phosphates tested have shown similar properties, the toxicity was at once attributed to the base and tests with other cadmium compounds were started.

Preliminary experiments in the laboratory have revealed that cadmium salts, in general, are toxic to the silk-moth caterpillar. Cadmium oxide and cadmium hydroxide ranked very high in toxicity and compared well with lead arsenate.

Cadmium hydroxide was tested against three different species of chewing insects which were available in the greenhouse, namely, tent caterpillar (*Malacosoma americana* Fabr.), silk-moth caterpillar (*Bombyx mori* Linn.), and confused flour beetle (*Tribolium confusum* Duv.).

Tent caterpillars transferred on apple twigs previously sprayed with cadmium hydroxide in concentrations of 1, 2, 3 and 4 pounds to 100 gallons of water showed percentage kill after 48 hours at the rate of 70, 90, 100 and 100, respectively. Considerable feeding took place during the first day and very little during the last day. About 82 per cent. of the silk-moth larvae were dead two days after they were transferred on mulberry leaves, previously dusted with a mixture of 95 per cent. talc and 5 per cent. cadmium hydroxide. Confused flour beetles placed in flour containing 15 per cent. cadmium hydroxide were found 100 per cent. dead after 10 days of feeding. Similar results were obtained on these insects with spray and dust mixtures containing cadmium oxide. A young apple tree infested with two tent caterpillar nests was sprayed on May 18 with a mixture consisting of 3 pounds $Cd(OH)_2$, 4 pounds lime, 1½ pounds skim milk and 100 gallons of water. Three days later about 90 per cent. of the insects were dead, while the rest appeared sick and were not feeding.

The writer is at present continuing these experiments on insects and is also conducting laboratory and field studies on the effect of cadmium salts on foliage. The results will be published in due time, upon the completion of the experiments.

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[3] A. Skovsted, *Jour. Gen.*, 28: 407–424, 1934.

[4] A. E. Longley, *Jour. Agri. Res.*, 46: 217–227, 1933. J. M. Webber, *cf.*, 1934.

[1] Paper of the Journal Series, New Jersey Agricultural Experiment Station, Department of Entomology.

ON THE INCIDENCE OF COLOR-BLINDNESS AMONG NEGROES

THE incidence of color-blindness in various racial groups recently reported by Garth[1] and by Kilborn and Beh[2] call for this report of observation made on 2,279 Negroes at Hampton Institute, Virginia.

For many years, our physiology students have taken the Holmgren Tests for color blindness, but since such investigators as Clements[3] and Miles[4] found the wool skein tests unsatisfactory, the Holmgren results were not used for this investigation. Instead, our Negro subjects were tested with Ishihara's well-known charts for the detection of color blindness. The subjects were of both sexes and included grade and high-school pupils, college students, teachers and others. Each was tested individually one eye at a time, the chart being placed at eye level at distances of from 24 to 60 inches in good evenly diffused daylight.

Of 1,628 male Negroes tested, 61 or 3.75 per cent. were color blind according to the Ishihara charts. Among these there was one case of monocular blindness, the right eye being red-green blind while the left eye was normal. Among the 651 female Negroes tested, no case of color blindness was observed (0.0 per cent.).

Our results, from a total of 2,279 Negroes, show a C. B. I. (color blindness incidence) of 3.75 per cent. for males (61 cases in 1,628) and agree closely with Garth's report (1933) of 3.9 per cent. for Southern Negroes (21 cases in 538) and almost exactly with Clements' (1930) report on Connecticut Negroes of 3.7 per cent. or 12 cases in 323. Our results of 0.0 per cent. C. B. I. for 651 Negro females agree tolerably well with Garth's 0.8 per cent. (4 cases in 496 Southern Negroes) and 0.0 per cent. or no cases in 165 Northern Negroes, probably in Colorado.

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[1] "The Incidence of Color Blindness among Races," SCIENCE, 77: 333–4, 1933.

[2] "The Incidence of Color-Blindness among the Chinese," SCIENCE, 79: 34, 1934.

[3] "Comparative Racial Differences in Color Blindness," SCIENCE, 72: 203–4, 1930.

[4] "One Hundred Cases of Color Blindness Detected with the Ishihara Test," *Jour. Gen. Psychol.*, 2: 535–543, 1929.