derivative from the same or other samples of resin were easily purified and identified by melting-point, mixed melting-point and optical properties.

Tephrosin was obtained by removing the methanol from the dehydrorotenone mother liquors, dissolving the residue in approximately an equal volume of *n*-butanol and allowing the solution to crystallize over a period of several weeks. The material was purified and identified by melting-point, mixed melting-point and optical properties.

The fourth substance, $C_{22}H_{24}O_4$, sometimes crystallized in small amounts from the alkaline methanolic solutions upon standing. A small quantity could always be obtained by adding approximately 5 per cent. of water to the alkaline alcoholic solution and allowing the turbid liquid to stand until it cleared. Crystallization usually occurred. If this did not take place, the oily insoluble layer in the bottom of the flask was dissolved in boiling petroleum ether and concentrated to about one fifth of its volume. Upon standing the solution crystallized. The material was purified by recrystallization from petroleum ether. It consisted of colorless rods which melted at 131° and gave in alcoholic solution a greenish purple color with ferric chloride, but it did not dissolve in aqueous alkali. Analysis for carbon and hydrogen and molecular weight determinations showed it to have the formula $C_{22}H_{24}O_4$. The material reacted with hydriodic acid in a Zeisel apparatus, giving an alkyl iodide, but the results were of such a character as to show that probably neither methoxyl nor ethoxyl groups were present. The material in a concentration of 1–100,000 when tested for toxicity, employing goldfish as test animals, was inert.

The yields of tephrosin and the C_{22} compound were small and variable, but, as with rotenone, there were ample indications that much more material than was obtained was present in the resin. In all probability the complex character of the extractives inhibited the crystallization of the individual constituents.

While the results here recorded account for only a small portion of the extractives of *Cracca virginiana*, it is interesting that this is the first native plant of the United States in which members of the rotenone group of fish poisons have been found.

E. P. CLARK

EFFECT OF TEMPERATURE ON EVERSPORTING EYE COLOR IN DROSOPHILA MELANOGASTER[1]

OUR x-ray experiments have produced three mottled-eyed stocks.[2] All are caused by some change in the normal allelomorph at the white locus of the x-rayed wild type sex chromosome. Regular males receiving a treated X-chromosome, and regular females heterozygous for a treated X and for white eye color, have mottled eyes.

Since the mutation rate varies directly with temperature in *Drosophila melanogaster*,[3] it might be expected that temperature would influence such conditions of genetic instability. Similar cases of eversporting in other forms have been tested for effect of temperature. Eyster[4] found that strains of maize with variegated pericarp color raised in Arizona showed less extreme variegation patterns than the same strains raised in a cooler climate in California. Demerec,[5] on the other hand, found that a difference of 10° C did not affect mutable miniature in *Drosophila virilis*.

Preliminary tests at 29°, 24° and 18° C show that the cooler the temperature at which the flies are raised the larger the light areas of mottled eyes in our stocks. Temperature affects viability as well as eye color. Mottled-2 is almost completely lethal to males at 18° and 24°, but at 29° a fair proportion of the expected males survive, demonstrating that genetic constitution may be a factor in determining the survival value of an organism in an unfavorable environment.

This temperature effect offers a means of determining the larval stage at which mottling occurs, which may furnish a clue as to the mechanism involved. Eyster's work and ours both indicate that the incidence of eversporting varies inversely with temperature, which seems to imply that something other than regular gene mutation is responsible for these cases of unstable genetic constitution.

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BOOKS RECEIVED

COUDERC, PAUL. *Discussion sur l'Evolution de l'Univers.* Pp. xii + 67. Gauthier-Villars et Cie, Paris. 15 fr.

HALDANE, J. B. S. *Science and Human Life.* Pp. vii + 287. Harper. $2.50.

PLANCK, MAX. *Wege zur Physikalischen Erkenntnis.* Pp. 280. S. Hirzel, Leipzig. 8. RM.

WHEELER, WILLIAM M. *Colony-Founding Among Ants.* Pp. viii + 179. 23 figures. Harvard University Press. $2.00.

[2] J. W. Gowen and E. H. Gay. "Eversporting as a Function of the Y-chromosome in *Drosophila melanogaster*," *Proc. N. A. S.*, 19: 122–126. 1933.

[3] H. J. Muller. "The Measurement of Gene Mutation Rate in Drosophila, its High Variability, and its Dependence upon Temperature." *Genetics*, 13: 279–357. 1928.

[4] W. H. Eyster. "The Effect of Environment on Variegation Patterns in Maize Pericarp." *Genetics*, 11: 372–386. 1926.

[5] M. Demerec. "Effect of Temperature on the Rate of Change of the Unstable Miniature -3-γ Gene of *Drosophila virilis*." *Proc. N. A. S.*, 18: 430–434. 1932.