DISCUSSION

INACTIVATION OF THE IRRITANT TOXICANTS OF POISON IVY AND POISON OAK

THE discovery of Sizer and Prokesch[1] that mushroom tyrosinase can render the poison of poison ivy (*Rhus Toxicodendron*) innocuous adds another oxidase to those already discovered which have this same property. However, all previous oxidases with the property of inactivating this (or these) poisons have been found in the poisonous *Rhus* sap along with the poison itself.[2]

It is of some interest to compare the clinical results of Sizer and Prokesch with those of Dr. Edward von Adelung. As the oxidase (or laccase) of western poison oak (*Rhus diversiloba*) has the power to change the poison to a non-toxic substance while exuded on the surface of an injured plant it was thought that this oxidase might change the poison to a non-toxic substance when on the human skin and thus be a remedy for Rhus dermatitis. Experiments were conducted by Edward von Adelung, M.D.[3] of Oakland, California, to ascertain the value of the enzyme solution as (1) poisonous or not; (2) a preventative of Rhus dermatitis; (3) remedy. The following results were obtained: (1) The enzyme solution did not produce dermatitis though rubbed briskly into the skin; (2) when mixed with Rhus poison in alcoholic solution it did not destroy the poison (the enzyme is active in 50 per cent. alcohol); (3) it had no remedial value.

However, it might be well to bear in mind that *Rhus diversiloba* oxidase is in all probability a different oxidase from the tyrosinase used by Sizer and Prokesch; and also that *Rhus diversiloba* poison may (or may not) be different from the poison of poison ivy (*Rhus Toxicodendron*).

It has been noticed by Bertrand that laccase (which apparently acts similarly to *Rhus diversiloba* oxidase) did not accelerate the oxidation of tyrosine but did accelerate the aerobic oxidation of guaiacol. On the other hand, he found mushroom tyrosinase to aid in the oxidation of tyrosine but not in that of guaiacol. Yet there is some similarity in the substracts acted upon by both enzymes; both enzymes oxidise some compounds containing mono- or polyhydroxy-phenyl groups. In the instance of tyrosinase this includes, as mentioned by Sizer and Prokesch, tyrosine and the sex hormones stilbestrol, estrone, a-estradiol or estriol. Therefore, one might have some expectation of finding the poisons of both poison oak and poison ivy to contain a mono- or polyhydroxy-phenyl group. That this is the case has been confirmed by the chemical analysis of several investigators. In regard to the poison of poison sumac (*Rhus Vernix*) being a hydroxylated compound, Stevens and Warren showed this to be the case as early as 1907. This was done by the use of the Grignard reagent. Stevens and Warren also observed that the magnesium organic halide, which resulted when the hydroxyl groups were destroyed by this reagent, was not toxic.

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[1] SCIENCE, 101: 517, 1945.

[2] H. Yoshida, *Jour. Chem. Soc.* (London) 43: 473–486, 1883; G. Bertrand, *Comptes rendus Acad. Sci.*, Paris, 18–145, 1894–1908 and *Bull. de la societe chimique de Paris*, 11– (3rd ser.) 4 (4th ser.), 1894–1908; A. B. Stevens, *Am. Jour. Pharm.*, 77: 255–260, 1905; A. B. Stevens and L. E. Warren, *Am. Jour. Pharm.*, 79: 499, 1907; J. B. McNair, *loc. cit.*

[3] J. B. McNair, *Jour. Infect. Dis.*, 20: 485–498, 1917; "Rhus Dermatitis," p. 69, 1923.

THE NAMES OF FOSSIL MEN

To the biologist working in other fields the significance implied by the names of fossil men is often misleading. He rather naturally concludes from such names as *Pithecanthropus erectus, Sinanthropus pekinensis* and *Eoanthropus dawsoni* that each is a distinct genus and species different from modern man. Furthermore, he believes that *Homo soloensis, H. rhodesiensis, H. heidelbergensis, H. neanderthalensis,* etc., connote types belonging to the same genus as does modern man but each to a different species.

However, to his dismay, he finds that his conclusions do not conform with those of some of the specialists on fossil man. Thus, Weidenreich,[1] one of the foremost contemporary authorities, states that all hominids, living and fossil, belong to the same species which is subdivided into several races or subspecies. This opinion is also held, on genetical grounds, by Dobzhansky.[2] In addition, Weidenreich[1] says that "The names given to groups and subgroups of fossil hominids have no 'generic' or 'specific' meaning. They are nothing but convenient labels, respected by tradition, to facilitate identification. I have used Sinanthropus and Pithecanthropus, etc., in this sense and shall continue to do so in the future." He also expels that famous "bone of contention," the Piltdown mandible, from the Hominidae and states that the name Eoanthropus should be discarded.

Most biologists believe that all living types of man belong to the same species, *Homo sapiens,* although Hill[3] and especially Gates[4, 5] have advanced evidence against this concept, the latter (Gates[5]) recognizing five species.

If all known men, living and fossil, do belong to the same species then the Linnear name, *Homo sa-*

[1] F. Weidenreich, "Palaeontologia Sinica." Whole Series 127: 1–484, 1943.

[2] T. Dobzhansky, *Am. Jour. Phys. Anthrop.*, n.s. 2: 251, 1944.

[3] W. C. Osman Hill, *Nature*, 145: 260, 1940.

[4] R. R. Gates, *Man*, 37: 28, 1937.

[5] *Idem. Am. Jour. Phys. Anthrop.*, n.s. 2: 279, 1944.