active substances, the potentials of sulfanilamide, sulfapyridine and p,p′-diamino diphenyl sulfone were measured. The potentials of these fell within a range of 20 millivolts. o- and m-amino benzenesulfonamide were the "inactive" compounds examined. These two substances gave potentials about 50 millivolts lower than the active compounds.

It must be emphasized that, until more is known about the blood levels obtained and the rate of absorption and excretion of "inactive" compounds, it is not possible to accept them as inactive in theoretical considerations. When an attempt is made to correlate activity, only compounds known to be present in the blood stream for intervals of time and in concentrations comparable with sulfanilamide or sulfapyridine, and under these conditions showing no therapeutic effect, should be considered as inactive. Strangely enough, for this type of work, some well-studied inactive compounds would be highly desirable. It seems possible that attempts of this sort to use some fundamental physical property as a stepping-stone in attacking the problem of correlating chemical structure with chemotherapeutic activity may lead to a more rational basis for the selection of new chemotherapeutic agents. Further work of this general nature will be reported later.

We conclude, on the basis of the following facts, that the "plateau potentials" of Shaffer are a function of the oxidized and reduced forms of the oxidizing agents employed, rather than of the oxidation products of sulfanilamide:

(1) In the presence of excess sulfanilamide the potentials fall rapidly as the oxidized form of the oxidizing agent is exhausted.

(2) Equilibrium potentials are established if partially oxidized solutions of sulfanilamide are allowed to stand for 48 hours.

(3) When an excess of ceric sulfate is present, the equilibrium potentials agree with those calculated for a cerous-ceric system.

(4) The "plateau potentials" can be varied within wide limits, depending on the rate of addition of the oxidizing agent.

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STRUCTURE AND SYNTHESIS OF A PLANT WOUND HORMONE

IN an earlier publication the isolation of a crystalline substance possessing wound hormone activity has been described.[1] This substance, which was isolated from the water extract of green string-beans, possesses the property of eliciting renewed growth activity in the parenchymatous cells of the bean mesocarp, and its activity may hence be quantitatively determined by the bean test which has been described elsewhere.[2] Elementary analysis of the crystalline product, together with its molecular weight (by m.p. depression in camphor) leads to the formula $C_{12}H_{20}O_4$, and the equivalent weight by titration indicates a dibasic acid.[1] Upon catalytic hydrogenation a crystalline dibasic acid, $C_{12}H_{22}O_4$, identical with decane-1,10-dicarboxylic acid was obtained. After oxidative degradation of the natural wound hormone, sebacic acid was obtained in good yield. The substance must therefore be 1-decene-1,10-dicarboxylic acid:

$$HOOC \cdot CH{=}CH \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot CH_2 \cdot COOH.$$

This structure has been confirmed by synthesis of 1-decene-1,10-dicarboxylic acid. The resulting product was found to be identical with the natural product both in chemical properties and in physiological activity.

1-decene-1,10-dicarboxylic acid is capable of evoking intensive wound periderm formation in washed discs of potato tuber. It would seem probable therefore that the material with which Haberlandt[3] dealt in his early investigations of wound hormone activity in the potato was at least in part 1-decene-1,10-dicarboxylic acid. It would seem appropriate and convenient to refer to this substance as "traumatic acid"[4] (from Greek τραῦμα = wound). A detailed report of these investigations will appear elsewhere.

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THE PLASMODIUM OF HEMITRICHIA VESPARIUM (BATSCH) MACBR

SCLEROTIUM collected from a partially decayed log furnished the source of material used in studying certain cytoplasmic elements in the plasmodium of a Mycetozoan species that had been treated with mitochondrial methods of technique.

When exposed to a humid condition in a large dish, the revived sclerotium issued a bright yellow stream of plasmodium on the woody substratum that had been thoroughly moistened. At this stage of development it was impossible to make an accurate determination of the species involved. For over four months the plasmodium was active under the stimulus of food, moisture and slight light, but when exposed to a bright,

[1] J. English, J. Bonner and A. J. Haagen-Smit, *Proc. Nat. Acad. Sci.*, 25: 323, 1939.

[2] J. Bonner and J. English, *Plant Physiol.*, 13: 331, 1938.

[3] G. Haberlandt, *Sitzungsb. d. Königl. Preus. Akad. d. Wiss.*, 16: 318, 1913.

[4] Report of work carried out with the aid of the Works Progress Administration, Official Project No. 665-07-3-83, Work Project Number 9809.