tion of the sperm and probably after meiosis, which is more sensitive than mature spermatozoa. The only alternative to this interpretation is that the amount of chromosome damage is increased in irradiated mature spermatozoa which are stored in the testis. This possibility has been considered by Hertwig, who tested and rejected it on the evidence of experiments in which irradiated males were kept for seventeen days before their first matings.

(4) Dr. Bateman seems to give much weight to the observation that in his own experiments with 200 r. the presterile period and one week of sterility together extended over six weeks. However, the length of the presterile period varies considerably between experiments (see Table 12–1 in ref. 3) and is certainly, as established by Hertwig, dependent on the amount of sexual activity of the males. The length of the sterile period varies even more between experiments and is determined mainly by the dose and the correlated more or less severe damage to spermatogonia. The sum of these periods is therefore not suitable for determining the time interval between meiosis and the availability of mature sperm. This interval is almost certainly much shorter than six weeks, as shown by older histological observations (see ref. 3) as well as by newer work with labelled phosphorus[5].

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A Convulsant Alkaloid of *Dioscorea dumetorum*

An alkaloid, dioscorine, has been isolated from various species of yam of the family Dioscoreaceae. Pinder[1] has summarized the history of this, confirmed its molecular formula as $C_{13}H_{19}O_2N$ and has documented certain of its chemical and physical properties[2]. A similar alkaloid has been extracted from a further species common in the wild state in Nigeria and identified by its botanical characteristics and typically small starch grains as *Dioscorea dumetorum* (Yoruba name, èsúru[3]).

The latter alkaloid has not been obtained crystalline, but has been extracted and purified by various procedures; together with its crystalline salts, its analysis supports the formula $C_{13}H_{21}O_2N$. Its infrared and ultra-violet spectra differ from those reported for dioscorine. Thus the *D. dumetorum* alkaloid shows a single absorption maximum at 2080 A. on a calibrated 'Unicam' spectrophotometer as compared with a maximum at 2170 A. reported for dioscorine. The chemistry of the former is being further investigated.

When injected into mice, the alkaloid of *D. dumetorum* acts as a convulsant poison. The convulsions are usually clonic at first, later tonic and may be followed either by death or recovery. When injected by the intra-peritoneal route, using a freshly prepared 1 per cent aqueous solution, the *LD*50 is approximately 65 mgm./kgm. Concentrations of 10^{-5} reduce the response to acetylcholine on the isolated guinea pig ileum and isolated rabbit duodenum preparations. At a dose-level of 20 mgm./kgm. the responses of the cat's blood pressure to acetylcholine and to adrenaline are altered. The depressor effect of the former is reduced, and the pressor effect of the latter is enhanced. No local anæsthetic effect could be demonstrated. Dioscorine[2] apparently lacks atropine-like properties in the concentrations mentioned above, nor does it potentiate the action of adrenaline on the cat's blood pressure.

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Aminomalonic Acid Decarboxylase: a New Enzyme

Aminomalonic acid was first described by Baeyer[1] in 1864, who found that heat treatment converted the amino-acid smoothly into glycine. Knoop[2] suggested the intermediary formation of aminomalonic acid in the biological formation of glycine from serine. But Haas[3] could not find evidence that it is a precursor of glycine in the rabbit, either in experiments on the whole organism, or in the isolated liver, or with liver homogenate. Shemin[4] has claimed to have excluded aminomalonic acid as an intermediate in the metabolic change of serine to glycine from results obtained by isotopic studies. However, this view was criticized by Ogston[5].

In the present communication, we report the presence in animal tissues of an enzyme which catalyses the decarboxylation of aminomalonic acid to glycine. This enzymatic activity was first observed in the homogenate of silk-gland tissue and afterwards in rat-liver homogenate.

The enzyme solutions used in the present work were prepared by homogenizing the posterior silk-glands of silkworms at the fifth instar with 3 vol. of 0·15 *M* potassium chloride and centrifuging off the undissolved material. The test system contained 0·5 ml. of aminomalonic acid solution (88 μmoles per ml., ammonium salt), 1·0 ml. of phosphate or acetate buffer and 1·0 ml. of the enzyme solution.

The rates of the reaction were followed in two ways. In one procedure the determination of carbon dioxide production was carried out with the conventional Warburg manometric apparatus. The amount of glycine formed was also determined. Aliquot samples were taken from the reaction mixtures and deproteinized by the addition of one-third volume of 95 per cent alcohol and boiling for 1 min. in the water-bath. The filtrates were assayed for