RESEARCH ABSTRACTS FOR 1937

The following abstracts summarize the results of investigations carried on at the laboratory during the summer of 1937. The reports have been edited only to insure uniformity of style and arrangement, but are otherwise in the form contributed by the authors. (For bibliographic reference it is recommended that the following form be used: "Bull. Mt. Desert Is. Biol. Lab., p.——.")

ABSORPTION AND EXCRETION OF SULFANILAMIDE IN FISH

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The importance of sulfanilamide (para-aminobenzene-sulfonamide) in the treatment of certain bacterial infections, and the lack of a clear knowledge of its mode of action gives interest to any facts concerning its pharmacological action. In an effort to study some of the idiosyncrasies exhibited by human beings to this drug, which cannot be produced in the ordinary laboratory mammals, we have investigated its action on fish. Although the initial problem has yielded no definite results certain facts in regard to the toxicity and absorption and excretion of sulfanilamide in fish are of interest. Sulfanilamide is much more toxic for fish than for mammals. Death frequently results in both the dogfish (Squalus acanthias) and the sculpin (Myoxocephalus octodecimspinosus) from the injection of 125 milligrams per kilogram of sulfanilamide whereas in mammals several grams per kilogram are necessary to cause death.

Excretion in fish is very much slower than in mammals. Small amounts appear to be excreted by both kidney and gills. In both blood and urine of the dogfish and sculpin sulfanilamide is present partly as a conjugated derivative which can be converted to sulfanilamide by hydrolysis.

The absorption of sulfanilamide by various routes of administration was studied. Using the blood curve obtained from intravenous administration as a standard, it has been found that absorption is most rapid from the intestine, somewhat slower from intramuscular injection, and very slow when the drug is administered by mouth or intraperitoneally.