

of the Ozarks, "genetics of the wax moth, *Galleria mellonella*"; Carl G. Vinson, professor of horticulture, University of Missouri, "the virus of mosaic disease of tobacco"; Allyn J. Waterman, instructor in biology, Brooklyn College, "progressive organization of mammalian embryos."

Anthropology and Psychology: Clarence W. Brown, professor of psychology, University of California, "the functional relationship between the amount of destruction and the voltage and duration of the current"; Frederica de Laguna, assistant, University Museum, University of Pennsylvania, "an archeological reconnaissance of the lower Yukon, Alaska"; Eugene A. Golomsh-tok, research associate, University Museum, University of Pennsylvania, "the Old Stone Age in European Russia and Siberia"; J. C. Boileau Grant, professor of anatomy, University of Toronto, "the physical anthropology of the Athapasean Indians of the Mackenzie River Basin"; Melville J. Herskovits, associate professor of anthropology, Northwestern University, "the motor habits of the Negroes of Haiti"; George Herzog, research associate, Institute of Human Relations, Yale University, "interrelation of the poetry, language and music of the Pima Indians of Arizona"; Edmund Jacob-

son, assistant professor of physiology, University of Chicago, "the influence of neuromuscular relaxation on blood-pressure, and action-potentials in peripheral nerves"; George Kreezer, research associate, The Training School at Vineland, New Jersey, "the coordination of antagonistic muscle groups in spasticity"; R. H. Stetson, professor of psychology, Oberlin College, "acoustic and physiological analysis of the vowel as it occurs in actual speech"; Michael J. Zigler, associate professor of psychology, Wellesley College, "the relationship between qualitative changes in cutaneous sensations and their physiological correlates in human nerve."

The National Research Council will be ready to consider further requests for research grants in the fall. Applications should be filed on blanks which will be furnished by the Secretary of the Committee on Grants-in-Aid on request, and should be filed with the committee before October 15, 1934. Action upon these applications will be taken toward the end of December.

ISAIAH BOWMAN,

Chairman, National Research Council

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A NEWLY DESIGNED TYPE OF STEEL CASE FOR ENTOMOLOGICAL WORKING COLLECTIONS¹

It is axiomatic among sportsmen that few men are open to suggestion involving the type of firearms they use. Probably the same degree of settled conviction is true regarding one's camera equipment or its lenses. At least my own experience has taught that few men welcome any suggested change or improvement of their photographic apparatus. Similarly, most museum men become attached to a particular type of housing for the collections in their charge, and are reluctant to consider, much less accept, any alteration of the methods to which they are accustomed. This is natural and to be expected, and in the great majority of instances is fostered by the financial limitations of budgets, which prevent the adoption of a type of housing not readily capable of assimilation and interchangeability with units already in use. However, in the belief that the presentation of practical methods, which have successfully met the requirements of a large museum collection, may be justified, I wish to place before the society a brief description of a new and relatively inexpensive, yet thoroughly modern unit for housing museum study collections of insects.

The older and larger institutions naturally have

had broader experience in matters of collection housing than smaller or newer institutions. My own association with museum work at the Academy of Natural Sciences of Philadelphia covers a period of thirty-six years, during which I have seen entomological collections pass from the double book box to the Schmidt box, and then to a larger unit of different type, while the housing of the same went from wooden cupboards by way of the Skinner cabinet of sheet tin, designed by my predecessor, Dr. Henry Skinner, to the modern steel unit I am now describing.

The housing problems our institution encountered were varied, and each department handled its own until the advent of the Cambridge cans for birds and mammals provided the impetus for the development of the Skinner cabinet, which was merely an enlarged Cambridge can provided with a rack to hold twenty-eight Schmidt boxes, or later fourteen glass-top boxes of a larger type. Like the Cambridge cans the Skinner cabinets required a double deck frame or rack for the most economical utilization of the available space. Some few years ago the staff of the Academy seriously undertook the development for each department of housings of automobile body sheet steel, to be lap or spot welded, with outer surfaces flush for the most efficient stacking, and yet with the greatest possible flexibility in the way of utilization, and at prices no greater than we had been paying for less satisfactory cases. The result is that to-day we have developed steel housings, each of special character and with

¹ Address delivered at the annual meeting of the Entomological Society of America, Boston, December 29, 1933, by James A. G. Rehn, of the Academy of Natural Sciences of Philadelphia.

specifically important features, for use in the departments of vertebrate zoology, entomology, mollusks, botany and geology and mineralogy. The entomological unit is the one with which we are now concerned.

The first point the entomologists faced was to design a case using the same type of glass-top wooden box, size $17\frac{1}{2} \times 13 \times 2\frac{1}{2}$ inches, which we had adopted as the standard box unit a number of years ago, and in which we had an investment of many thousands of dollars. These had been used in Skinner cabinets, and it was our intention to transfer them *in toto* to new cases.

The case as perfected is built of standard automobile body sheet steel, bent over templates and lap-welded, with outside dimensions of 77 $\frac{5}{8}$ inches high, 40 inches wide and 14 $\frac{1}{16}$ inches deep, with double hinged doors opening outward, locking into a central division and at top and bottom by bar locks operated by a T handle on each door. The central division is carried the full depth and height of the case, stiffening it and providing on each side its complement of slide shoulders, which with those on the sides of the case itself provide spaced sections for 48 of the standard boxes, 24 on each side. The doors close on felted surfaces, thus providing with the very tight-fitting box lids double protection against insect pests and dust. These felt strips can be poisoned, if it is

thought necessary. The finish of the units, both inside and out, is enamel of the desired color, baked on.

A number of these cases are now in constant service at the Academy and have been found satisfactory in every way. In cost they are quite moderate, considering their sturdiness, efficiency, relatively light weight and ease of operation. They possess all the advantages of the old type wooden cabinet, lack the ponderosity of one of the steel cases now in use in some institutions and have numerous advantages when compared with another smaller unit similarly in institutional use elsewhere. Boxes can not stick or jam in the runways, as they are not in contact; guides or boxes can not swell or stick, as the boxes rest on top of a smoothly enamelled metal shoulder and do not quite touch the one above. Pulls are not necessary on the individual boxes, as ample finger space is provided both above and below each.

The cases now in use at the Academy have been furnished by the Peerless Steel Equipment Company, of Philadelphia, which also supplies our other storage steel cases, as well as steel exhibition cases of unique mechanical construction, designed by members of our staff.

JAMES A. G. REHN

ACADEMY OF NATURAL SCIENCES
OF PHILADELPHIA

SPECIAL ARTICLES

OBSERVATIONS ON ADRENALECTOMIZED, DEPANCREATIZED CATS

OUR attention has just been drawn to a paper by Barnes, Scott, Ferrill and Rogoff in the Proceedings of the Society for Experimental Biology and Medicine (February, 1934). These authors report that if unilateral adrenalectomy is performed in dogs prior to total pancreatectomy, the course of the ensuing diabetes is very mild and comparable to that observed in hypophysectomized, depancreatized animals. Furthermore, unilateral adrenalectomy after total pancreatectomy led in one dog to a reduction to half of the insulin dosage required, while another animal showed only a mild glycosuria with no insulin.

In view of the interest of these results we wish to report our own experiences with cats in which both adrenals and all the pancreas have been removed in stages.

In four cats one adrenal and four fifths of the pancreas were removed at preliminary operations; the remaining portion of the pancreas was grafted under the skin of the abdomen. When the wound was healed and the animal in good health the second adrenal and the pancreatic graft were removed. Ad-

ministration of liberal doses of a commercial cortical extract were immediately instituted, but at no time was any insulin given. These animals lived 11, 7 and 5 days, while the fourth animal was killed on the seventh day while in good health for liver glycogen determination (2.5 g per cent.).

In another animal (Cat 5) the pancreatic graft became infected. When this was healed it was discovered that the animal was diabetic (fasting blood sugar 180 mgms per cent.). Removal of the graft and the remaining adrenal was carried out as before and the animal lived 11 days.

The behavior of all these animals after the second operation has been identical. They all ate well and did not resemble ordinary depancreatized cats in their clinical course. They died suddenly with convulsions, but for several days before death showed such marked hypoglycemic symptoms that in several instances they had to be resuscitated with glucose. The loss of weight was only moderate and not to be compared with that usually observed in depancreatized animals not treated with insulin.

The most striking findings have been: (a) The fasting blood sugar level. In Cat 1 (lived 11 days) it ranged from 32 to 105 mgms per cent. In Cat 2