THE Illinois Natural History Survey has acquired the Charles Robertson Collection of Insects, one of the largest collections in the state. It was purchased from Charles V. Robertson, son of the collector. The late Charles Robertson was for many years professor of botany at Blackburn College, Carlinville, Ill. Over 30,000 pinned insects comprise the collection, including over 200 type specimens. Bees and wasps make up about 20,000 of the collection. The Charles Robertson Collection of Insects was assembled over a period of thirty years. It was the result of a study by Professor Robertson on the interrelationships between insects and plants in pollination activities. The collection has been brought to Urbana and will be moved to the Natural Resources Building when it is completed.

# DISCUSSION

## COPYRIGHT

A BILL, S.3043, that proposes a complete revision of the copyright legislation of the United States is now before the Senate Committee on Patents. This bill was presented to Congress on January 8, 1940, at the request of the Committee for the Study of Copyright, which is a subcommittee of the National Committee of the United States of America on International Intellectual Cooperation, and which has the following members: Dr. Waldo G. Leland, American Council of Learned Societies; Professor James T. Shotwell, American member of the Committee on Intellectual Cooperation of the League of Nations; Professor Huger W. Jervey, Law School of Columbia University; Dr. Edith E. Ware is executive secretary.

Charged with the duty of proposing ways and means of improving our international relations in regard to copyright protection for the purpose of facilitating cultural interchange, the Committee for the Study of Copyright has studied Latin American laws and conventions; it recommended the protocol in Resolution XXXIX of the International Conference of American States at Lima, December, 1938, for amending the Buenos Aires Convention of 1910 for the Protection of Literary and Artistic Works. In 1938 and again in 1939, it sent a representative to the meetings of the Committee of Experts that was preparing the agenda of the Brussels Conference on the Revision of the Berne Convention (planned for 1940), who was able to explain the American position on a number of points. Meanwhile, the committee concluded that before the United States could become party, on an equal footing with other states, to any of these international conventions it would be necessary to revise its own law both in principle and in relation to modern methods of diffusion and of business practice.

This revision was undertaken with the cooperation of representatives of the major national associations that represent the creators and consumers of literary and artistic works. In round-table conferences, begun in the summer of 1938, the theory and practice of copyright protection was discussed. It was soon realized that, although international copyright protection had been the original object of the work of the Committee for the Study of Copyright, it was necessary to provide more adequate protection both for the author and for the consumer of literary and artistic works at home.

The basic principle for adequate protection for authors proved to be the same whether protection were desired nationally or internationally. Furthermore, it was found that trade practice here (although contrary to the letter of the present copyright law) and the legal practice in countries party to the Berne Convention coincided in regard to what is known as divisibility of copyright; that is, that the author may grant rights to use a work he has created in whole or in part, or for definitely specified times and places. It appeared desirable, therefore, to provide for this practice in our own law.

Another principle recognized by the more than forty countries of the world that have been members of the Berne Union for the Protection of Literary and Artistic Works is that authors have copyright in their works by virtue of having created them. International copyright relations built upon this principle have worked satisfactorily. American authors, who have all too frequently found themselves without copyright protection through the failure of agents, beyond their control, to fulfill all the formalities as required, have long been asking the same system of recognizing the rights of authors in the works they have created. Therefore, the basic principle of the new bill is that Congress grants to authors protection of their rights in their own works upon creation and without compliance with any conditions or formalities.

But since the right to use a work or any part thereof for profit is the control that is especially important in copyright, the new bill proposes that all grants of right to use a work or any part thereof shall be in writing and that such grants may be recorded in the Copyright Office, in much the same manner as transfers of land are recorded in a registry of deeds. Through careful provisions in this regard, the bill is designed to serve the interests of the consumer as well as those of the creator, for consumers in recent years have clamored increasingly for better protection through more adequate means of tracing title to the works or the rights in works they wish to use.

Deposit of copies in the Library of Congress is

retained, not as a condition of copyright but for the purpose of keeping a complete record of national literary and artistic achievement. The publisher, who must in any case furnish the Copyright Office with proper evidence that each publication was manufactured in the United Staes, is asked at the same time to deposit two copies with the Copyright Office. This arrangement is believed to incur no hardship upon anybody.

Statutory damages, much revised, are retained as a deterrent to infringement. This principle has been characteristic of every copyright law in the United States since 1790; in addition, however, the right to sue for statutory damages, under the provisions of the new bill, is dependent upon the fulfillment of all acts prescribed therein, or, to put it the other way, failure to fulfill the provisions of the bill automatically deprives the delinquent of his rights to statutory damages.

The bill that has been constructed upon these principles contains a number of new provisions: for example, it specifies among the non-infringing uses of copyrighted works the conditions under which libraries and individuals may use microcopy or other photographic process for the copying of manuscripts or of books no longer available for purchase. New techniques or new methods of diffusion are recognized and special provisions are made for non-infringing uses in relation to depicting or broadcasting public scenes or news events. The section on alien authors has been carefully rewritten, and includes extended jurisdiction of the presidential proclamation in international copyright matters. The manufacturing requirements for foreign English language works eliminate the old *ad interim* clause and set a generous importation quota for a trial sale edition. If the author or other owner imports more than the 500 printed copies permitted, in addition to the sales to libraries and certain other individual exceptions, the punishment is loss of protection for the right that has infringed the regulation; all other rights are retained.

Space prevents further summary of the content of S.3043. It is published in full in the *Congressional Record* of January 8, 1940, pages 134–49.

WALDO G. LELAND

AMERICAN COUNCIL OF LEARNED SOCIETIES

## TYPES OF ANIMAL REFLEXES

THE usual type of reflex mechanism in animals consists of an afferent nerve path extending from a sense organ to some part of the central nervous apparatus whence an efferent nerve path leads to an outlying effector, commonly a muscle, gland or other like organ. This type of reflex mechanism, whose recognition dates from the days of Descartes, is well exemplified in the melanophore system of the catfish (Ameiurus) in which afferent nerve paths extend from the fish's eyes to its central nervous organs whence efferent nerve paths pass outward to the melanophores in its skin. This system is concerned with the reflex darkening of the fish which results from an expansion of its integumentary melanophores when, for instance, the fish is in a brightly illuminated, black-walled vessel.

Catfishes likewise become dark by means of a second system essentially independent of the one just described. When bright light falls on the skin of a catfish, it stimulates certain photoreceptors whereby impulses are generated that pass over the integumentary nerves to the central nervous organs where they reach the pituitary gland on the base of the brain. These impulses excite the discharge of one of the secretions of this gland, intermedin, which is then transported by the circulatory fluids of the fish, blood and lymph, from the place of origin to melanophores in the skin. Here the intermedin causes the melanophores to disperse their pigment and thus to darken the fish. This type of response is as truly reflex as the first one, but it differs from that one in having a humoral efferent arm in place of a nervous one. Its afferent arm, however, remains, as in the typical reflex, purely nervous. Such a reflex is thus easily distinguished by its humoral efferent component and may be designated in consequence of the sequence of its two components a neurohumoral reflex.

From the standpoint of humoral substitution a third type of reflex may be anticipated. In this the afferent arm would be humoral and the efferent nervous. As a matter of fact, such a reflex is to be seen in the respiratory organization of the higher vertebrates. Here the humoral afferent arm is represented by the stream of lymph and blood carrying carbon dioxide or other exciting metabolite from the animal's tissues to the respiratory center in its medulla oblongata. The nervous efferent arm in this reflex is the motor nerve connections between the medulla and the respiratory muscles. If the preceding example in consequence of the sequence of its components may be called neurohumoral this one for the same reason may be termed humeroneural. Thus, when neurohumors are taken into consideration, at least three types of animal reflexes can be distinguished, purely nervous, neurohumoral and humeroneural.

G. H. PARKER

HARVARD UNIVERSITY

## NEW MATHEMATICAL LIBRARY OF INSTITUTE FOR ADVANCED STUDY

LAST fall the Institute for Advanced Study in Princeton, N. J., moved into a building of its own erected on its own grounds, called Fuld Hall. Up to