

RESEARCH AIDED BY AMBER COLLECTOR

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THE STORY of the A. F. Kohlman Collection of Baltic amber insects and its acquisition by this Museum, noted briefly in the July issue of the BULLETIN, nicely illustrates a number of points about collectors, collections and museums—so much so that, when I was asked to prepare an article about the collection, I decided to write about these rather than attempt to compete with Willy Ley, who has masterfully treated the story of amber and its inclusions in his book of natural history essays, *Dragons in Amber*.*



OLIGOCENE ANT IN AMBER

The specimen, obtained from deposits along the Baltic Sea, is estimated to be between 30 and 35 million years old. Nature has preserved it perfectly in its transparent envelope of fossilized resin so that today's scientists may study its minute details as easily as in a laboratory-prepared slide. Included in the Kohlman collection acquired by the Museum.

The points in the story of the Kohlman Collection that particularly stand out are: the role of the amateur in building up valuable scientific collections; the role museums play in preventing or arresting the dissipation of such collections by acquiring and preserving them for future study; the frequently fortuitous thread of circumstances by which a museum is enabled to fulfill this function; the piecing together of bits of information that the staff must frequently resort to in order to learn something of the collection and collector; and the museum's part in making such study material available to qualified researchers so that it either begins or continues to function in the sphere of scientific inquiry.

We have almost no direct information about Mr. Kohlman except that he was single, was a dispatcher for the Chicago and North Western Railway, and that he lived for many years in Milwaukee and later moved to Racine, Wisconsin. But it is obvious from the nature of his effects—such as we have seen—that he was in many ways a man of singular interests and accomplishments. Judging from various dates on scraps of paper and newspaper wrappings

that accompanied the collection, it would appear that he brought together at least the greater part of his amber collection during the years 1900 to 1915, and that he lived in Milwaukee during this time.

NOT FOR DILETTANTES

In all probability, his interest in these insects arose through an interest in microscopy. Not only did his library contain numerous works on this subject, but his other collections reflected the interests of a member of that rapidly vanishing group, the amateur microscopists. In addition to his amber insects, Kohlman built up respectable slide collections of diatoms and tissue preparations, but he had only a relatively small number of the kind of slide preparations that were simply items of beauty or curiosity, or examples of the technician's skill that characterized the collections of less erudite microscopists. Kohlman's collections bore the stamp of the expert amateur. Histology (tissue study) is not a subject for the dilettante to pursue, nor is the study of amber insects when carried beyond the mere collecting stage. Some of his identifications of amber insects would have done credit to the best professional systematic entomologists.

Kohlman's interest in optics extended further than merely looking through a microscope. That he was an expert photographer is evident from a series of excellent photographs of diatoms and amber insects that he made, all in duplicate stereoscopic views. Later, he turned to amateur astronomy. He built an 8-inch reflector telescope, and began the construction of a 5- or 6-inch refractor. Toward the end of his life, if we may judge from the publication dates of his books, he became interested in mystic philosophy.

It was at about the time of his death, several years ago, that his amber collection first came to the attention of this Museum. A visitor to the Division of Insects mentioned that someone in lower Wisconsin was reputed to have a collection of amber insects. Lack of further clues made it impossible to pursue the matter and it was forgotten.

SAVED FROM DISCARD

After his death, his sisters advertised his effects for sale at public auction. The amber insects were not listed. Not only did the family regard the collection as being of little value, but they had even thought of throwing it out. Fortunately, his microscope was listed, and this attracted the attention of F. E. Trinklein, teacher of physics and chemistry at Lutheran High School in Racine. He attended the auction in the hope of getting the microscope for his school. He saw the amber collection in the home among Kohlman's effects and, realizing its sci-

tific value, purchased it and the telescope for a nominal sum.

Mr. Trinklein kept the collection at the school, but recently, being anxious both to place the collection in a more suitable institution and to raise some funds for the science department, he decided to sell it. He offered it to Chicago Natural History Museum among others. Members of the Museum staff examined it and recommended its purchase. A university was also interested in obtaining it, for teaching purposes. Such a disposition would probably have resulted in the dissipation of much valuable research material because this particular university has no specific equipment and staff—as does a museum—that are committed to the preservation and protection of such collections over long periods of time. The university offered to give up its bargaining position if we would sell them a small duplicate collection at a later date. This was agreed upon, and thus the collection came to this Museum.

But this is not the end of the story, for in inventorying the collection so that it could be accessioned and paid for, several specimens were found which obviously were frauds. This made it necessary to determine the authenticity of the collection as a whole. Not a specimen had data as to locality and source, and although the appearance of the material was that of perfectly good amber, we did not care to be in the company of those many "experts" who have been cheated by fakers of amber fossils or who have been deceived by specimens entrapped in modern or fossil copal gums. Physical and chemical tests satisfied us that the amber was genuine. About 90 per cent of all amber is Baltic amber and since 99.5 per cent of this comes from the Samland Peninsula north of Königsberg, Prussia, there is little chance that any of the Kohlman specimens came from any other locality.



CHIEF SOURCE OF AMBER

Approximately 90 per cent of the world's amber supply has come from the Samland Peninsula which, as map shows, is on the Baltic Sea in what was formerly East Prussia. It is now under the domination of the U.S.S.R. and little if any of its amber yield is available at present.

* New York, The Viking Press, 1951.

After the collection had been accessioned, the question arose in our minds as to whether or not the material acquired represents the entire Kohlman collection. Numerous bits of evidence indicate that it does not. First, Mr. Trinklein informed us that insect amber pieces turn up from time to time in jewelry worn by young ladies in the school. This would seem to indicate that Mr. Kohlman had disposed of a number of pieces locally after his interest had diminished. Second, most of his photographs seem to have been of the rare and unusual or especially perfect specimens, a number of which are no longer in the collection. The "cricket" shown in the accompanying illustration is such a piece. There is no reason to believe that any of these specimens did not belong to Kohlman.

There are several other kinds of evidence involving his classification and numbering system and percentages of groups represented in the collection, but the most impressive evidence is the large box of amber cuttings that he left. These are the raw chunks of amber from which the pieces containing insects were cut for grinding and polishing. The number of cuttings is far greater than would be expected if only those pieces that are now in the collection were cut from them. It is possible that he may have had as many as six thousand prepared slide specimens. At present the collection contains approximately 1,450 of these and another 800 unmounted and mostly unpolished specimens.

Although the Museum was unable to prevent such dissipation of the collection as may have occurred, what it has preserved still ranks as the second largest collection of Baltic amber inclusions in America. That it is by no means an unimportant collection in the world picture is indicated by the fact that the most recent study of amber spiders was based on a total of 144 specimens, including the combined material of the British Museum (Natural History), the U. S. National Museum and several other museum sources. The Kohlman collection contains 196 spiders.

BEST COLLECTION BOMBED

The relative importance of any existing amber collections has been much augmented by several events of the last two decades. The output of the amber mines was much diminished prior to World War II. They are again producing but are in Russian hands. The most important amber collection in the world—that of Albertus University in Königsberg—was destroyed by bombing and fire during World War II. This collection of more than 100,000 specimens was not only the largest, but contained the finest specimens, selected from the inclusions that were sorted out at the government mines. In addition to amber inclusions, the collection also contained many historically important and extremely valuable pieces of carved amber and jewelry.

Further, while in Vienna in 1951, I was told that the Bachofen-Echt collection, reputed to be second in importance, had been sold piecemeal to jewelers by Bachofen-Echt's widow. This collection had earlier been strewn in the streets of Vienna by looting Russian soldiers. Most of it was salvaged and then offered for sale to various museums, without success. The fate of this collection points up the fact that the existence of museums is not in itself insurance against the loss of such valuable materials; in many instances museums can preserve these collections for study and re-study, by present and future generations, only if they can raise adequate funds to purchase and house them. Frequently the heirs to such collections ask more money for them than museums are able or should be expected to pay.

For this reason many modern scientific workers arrange while they are still living that their personal collections and libraries are committed to an institution of their choice by bequest, deposit, or sale at a nominal price.

Although researchers have published on amber insects for more than a century, there



'CRICKET' IN BALTIC AMBER

Reproduced from a photograph among papers accompanying collection of the late A. F. Kohlman, recently obtained by the Museum. Note air bubbles in the amber.

is still much to be learned from the study of these fossils. For historical reasons, most American entomologists have been unable to study amber insects first hand. Within a few weeks after the Kohlman collection arrived at Chicago Natural History Museum, parts of it had been placed in the hands of specialists for study. The first of these specialists that we have heard from indicates that he is able to see structures on our specimens that the European authorities could not see on theirs, and that as a result of this he can make improvements in the classification of the families of insects in question. We hope to distribute more of the collection to competent workers shortly.

Excellent specimens of insects preserved in copal can be seen in the exhibit of resins in Stanley Field Hall.

BATTLE WITH SEA—

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a sea anchor, 200 feet of line and their dinghy. To add to the piling up of misadventures, a five-gallon can filled with fish in formalin leaked over the cabin and deck. Characteristically, Mr. Erdman reassured Curator Woods that the fish were saved, never mentioning the effects of the formalin on his family's daily living habits. The climax to their difficulties was the breaking of a stay, which couldn't be repaired for six days because of the rough waters. The Erdmans had no choice but to let wind and water have their will, and uncooperative as those two elements proved to be, their combined efforts drove the *Booby* exactly where its crew didn't want her to go—300 miles off their course to Serrana Bank.

After the Erdmans reached port in Jamaica their luck didn't improve. A squall caused the *Booby* to break loose from her anchor and crash into the dock, dragging her secondary anchor, a 150-pound kedge, onto the beach. The *Booby's* next visit to shore was made in a similarly unorthodox manner—this time she dragged a yacht club mooring with her. When, to add to these troubles, a heavy chain snapped and the stalk of the *Booby's* new anchor bent, Mr. Erdman began to be plagued by disturbing doubts as to the adequacy of both his gear and himself. But his confidence was restored, in part at least, when still another squall blew up and a yacht broke loose from her anchor while the *Booby* rode serenely aloof from the chaos, preserving all her poise as a true ship, with her mudhooks holding firmly.

GIFTS TO THE MUSEUM

Following is a list of the principal gifts received during the past month:

Department of Botany:

From: Academy of Natural Sciences, Philadelphia—5 seeds of Scrophulariaceae; Holly Reed Bennett, Chicago—105 grasses and sedges, Chicago and Indiana Dunes; University of California, Berkeley, Calif.—30 seeds of Scrophulariaceae; Luis Mille, Bahia, Ecuador—9 Caracolillo tree leaves and seeds, Ecuador; Museo Nacional Historia Natural, Santiago, Chile—5 *Escallonia* species, Chile

Department of Geology:

From: Richard M. Bookwalter, Chicago—2 specimens of silicified wood, Petrified Forest, Ariz.; Charles A. Ross, Urbana, Ill.—insect wing in nodule, Illinois

Department of Zoology:

American Museum of Natural History, New York—2 lots of fishes, Bimini, Bahamas; Carnegie Museum, Pittsburgh—4 eels and a blenny, Guam; Chicago Zoological Society, Brookfield, Ill.—a mammal; Riccy Deliberto, Westmont, Ill.—a garter snake, Illinois; Delzie Demaree, Ocean Springs, Miss.—a collection of marine shells, Mississippi



Wenzel, Rupert L. 1953. "Research Aided By Amber Collector." *Bulletin* 24(8), 6-7.

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