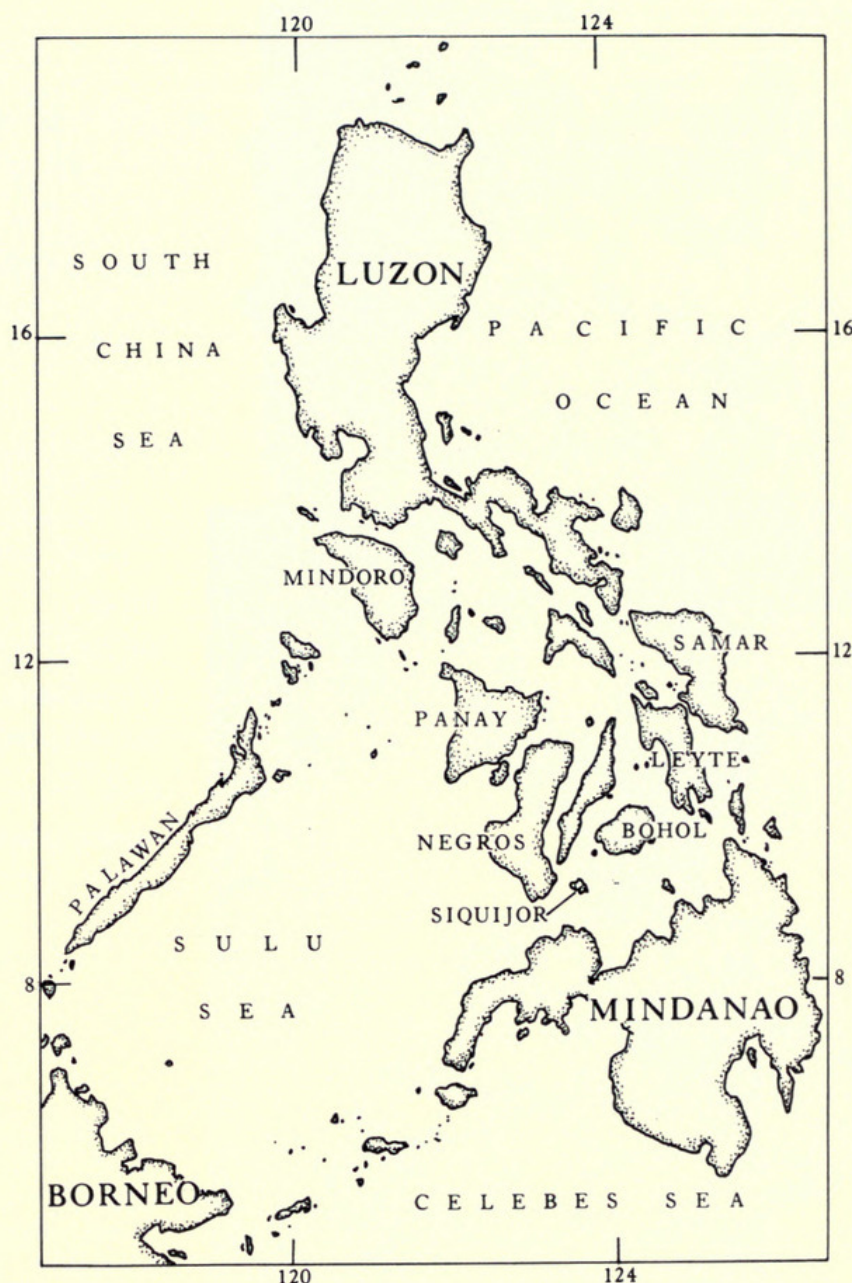


AUSTIN L. RAND  
CHIEF CURATOR  
ZOOLOGY

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# A ZOOLOGICAL EXPEDITION TO THE *PHILIPPINES*

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FOR twelve years, the study of Philippine birds has been one of the continuing projects of the Museum. This work has been made possible by cooperation between the Museum and Dr. D. S. Rabor of Silliman University, Negros, P. I., who has interests similar to ours. Dr. Rabor heads the science department of his university. Each vacation period, he takes a group of his students on a field trip to a different part of the archipelago, where they study and collect natural history material, and especially birds. This field work we aid with some travel funds and some collecting material. In return, many of the specimens collected come to the Chicago Natural History Museum, where our large collections provide a basis for com-

parative and critical studies.

While Rabor's studies are mostly done in the field, he has spent parts of two years in Chicago, working in the Museum. While my work has been mostly done in the Museum, I have spent a few months in the field with Rabor. As long range projects, Rabor is writing an up-to-date handbook of Philippine birds, while I have a check-list of Philippine birds in manuscript. Each year, there is a quantity of new data to add to both.

It seems timely to pause and review what we have accomplished. The most obvious is the splendid collection of birds we have built up at the Museum. The main islands—Luzon, Mindanao, Samar and Negros—are well represented, and from the first two we have collec-

tions from different parts of the isles showing that each may be as different as are different islands. We also have important collections from Bohol, Palawan, Calamianes and Cebu, and through earlier exchanges with the old Philippine Bureau of Science we have some specimens from many other scattered islands.

But the possession of specimens is only the beginning. They are the raw material from which one reads new knowledge, the reference material needed to document old knowledge and to re-interpret it in the light of subsequent discoveries. Though the major reports are still in manuscript, we have published preliminary studies on some of our findings. These include some twenty papers totaling over 300 pages.



Most outstanding are the novelties discovered. We have described two new bird species. One is a small, greenish babbling thrush of the trees, the other a brown babbling thrush of the forest floor. We have described nearly two dozen new subspecies, some of them, like the little red-headed owl of Negros, so different from their nearest relatives that perhaps they, too, should be considered species.

Not as exciting, perhaps, but even more intriguing are the half dozen cases where we have discovered that what has been considered one variable species really represents two quite different ones. For example, a large brown fruit pigeon is widespread, with a different subspecies on each major island. But we found that both the endemic Mindanao form and the form thought to be restricted to adjacent Basilan actually occur together on the former island and behave there as two species, which we now consider them to be. The Basilan bird, in the isolation of its original island home, has evolved into a species that was able to recolonize Mindanao, despite the occupation of the island by the Basilan's closest relative.

A special case of this "circular overlap" is shown by certain little green leaf warblers. One type "A" lives on Negros and other southern and central islands; another type "B," which looks to be a subspecies, is found only on Luzon; a third type "C" lives on Negros, and would be considered a third subspecies if it did not overlap the range of "A." As subspecies cannot live together, "A" and "C" must be considered species. The status of the perplexing "B" is solved by linking it arbitrarily with "A," with the mental reservation that here we have a case where two species have evolved without the connecting link between them having yet been lost.

A large green parrot has provided a case of what we call a checkerboard pattern of variation. The birds of adjacent islands are sufficiently different in size and color to be recognized as subspecies if it were not that the same characters are repeated in more distant populations.

For example, the Palawan and Mindanao populations, or the Talaut and Siquijor, are quite similar, but they are separated by large areas inhabited by different populations. The taxonomic

treatment of this type of variation by using subspecies names for each population, based solely on geography, is unsatisfactory, so we lump them together but point out that a checkerboard type of variation exists. For such studies, large series of specimens are obviously essential.

We have recorded birds new to the Philippines, as well as new range extensions within the Philippines. For instance, thirteen species have been added to those known from Siquijor, 25 species to Bohol, and nineteen to Samar. These are the three islands for which we have published complete lists, as well as discussions of their zoogeography and ecology. There is hardly a page in the older books on Philippine birds which does not need revision on the basis of our studies.

The past geological history of the Philippines has had its effect on bird distribution, and for the study of this zoogeography knowledge of the precise ranges of the birds is important. For instance, the main islands of Luzon, the eastern islands of Samar and Leyte, and Mindanao, have similar birds and are grouped together as the "eastern province" of the Philippines. One unexplained range was that of the little crow that was recorded from Samar and Mindanao but not found on Luzon, despite the great amount of collecting that has been done there. There seemed to be nothing in zoogeography to explain this. Then Rabor collected two specimens on northern Luzon, showing that the bird does occur there (incidentally, it was a new subspecies), though it is very rare. This recalled that it was also rare in Mindanao, though common on Samar. One suspects here that ecological rather than geological factors are the important ones in determining its occurrence as well as its abundance.

In an attempt to sort out the ecological from the zoogeographical effects on distribution, we examined the small island of Siquijor, which is about fifteen miles out in the Sulu Sea from Negros. A comparison of the two islands is as follows:

Negros, area 12,699 square kilometers . . .	183 breeding birds
Siquijor, area 235 square kilometers . . . . .	83 breeding birds

This illustrates that the smaller an is-

land, the smaller the avifauna. We have discussed this and other small island effects under such headings as "distance from other islands," "size of island," "first arrivals excluding other colonists," "occurrence of two species in a genus," "small island species" (some Philippine species, like the big white nutmeg pigeon, live only on small islands—why, we do not know), "change of habitat on small islands," and "patterns of variation" (for example, birds on small islands tend to have longer bills).

Another interesting and puzzling point about Siquijor is that certain migrants from Asia are much more common as winter visitors on this little island than they are on other nearby larger islands.

What all these factors mean is still imperfectly known, but at least we are finding out some of the facts of distribution and occurrence which will repay more study, and island distribution and speciation can nowhere be better studied than in the Philippines, where there are more than 7,000 islands displaying a remarkable range in size.

Taxonomy and distribution, the kinds of birds there are and where they live, are the mainstay, the "bread and butter" work, of a museum ornithologist. But many other points emerge in the course of studies, either from looking at specimens or from field reports.

In one shipment to the Museum, a bulbul's nest had withered brown leaves in its lining, leaves that forcefully reminded me of the snake-skin used in a Madagascar bulbul's nest. This sparked a review of the use of shed snake-skins in birds' nests, with the conclusion that the important question is not why some birds use shed snake-skins, which are very suitable material, but the more general one of why some species of birds use nest materials which are characteristic and different from those of other related species.

A dried tongue attached to a specimen of flowerpecker provided material for reviewing the relationships of the flowerpecker family. The tongue was brush-tipped and quite unlike that of any other flowerpecker, but very similar to that of certain honeyeaters. Supported with certain other data, including the nest structure, it appears that flowerpeckers

(Continued on page 7)



**Sharat K. Roy**  
(1898–1962)

Dr. Sharat Kumar Roy, Chief Curator of the Department of Geology, whose death occurred on April 17th, was a distinguished scientist of outstanding ability and achievement.

Dr. Roy was born in India in 1898, and attended the University of Calcutta and the University of London. He came to the United States in 1920 and graduated from the University of Illinois in 1922.



Sharat K. Roy

He received the degrees of Master of Science in 1924 from the University of Illinois and Doctor of Philosophy from the University of Chicago in 1941.

He began his professional career in the Department of Geology of the New York State Museum in Albany, and joined the staff of Chicago Natural History Museum in 1925 as an Assistant Curator in the Department of Geology. He has served continuously with the Museum since that time, becoming Chief Curator of his department in 1947.

Dr. Roy served in the British-Indian Army during World War I. In World War II he received a commission as Captain in the United States Army Air Forces and was discharged with the rank of Major in July, 1946.

In addition to many collecting trips in various parts of the United States, Dr. Roy was a member of the Second Rawson-MacMillan Subarctic Expedition of Field Museum in 1927–28; and he collected ores, lithological specimens and Paleozoic fossils in Newfoundland the following year. In 1945, on leave from the United States Army, he collected Permian fossils in mines in eastern India and in the Salt Range of northern India.

From 1953 to 1961 Dr. Roy conducted six field trips to Central America to study the volcanos of that region. In

1957–58 he spent one year in Europe and India under a National Science Foundation grant, engaged in research and consultation on stony meteorites, concentrating on those containing rounded bodies called chondrules.

He has published more than 30 scientific papers in the fields of invertebrate paleontology, meteoritics and volcanology, and was a Fellow of the Royal Geographical Society as well as a member of numerous professional societies.

In recognition of his exploratory geological work in the Arctic, the United States Coast and Geodetic Survey, in 1944, honored him by designating one of the mountain peaks on Baffin Island as "Mount Sharat."

With Dr. Roy's death the Museum staff has lost a colleague of unassuming and gentle temperament. He will be missed by all who had the privilege of knowing him.

**Tutankhamun Treasures**  
**Coming to Museum**

An exhibit of treasures from the tomb of King Tutankhamun will be presented at Chicago Natural History Museum from June 15 through July 15 under joint sponsorship of the Museum and the Oriental Institute of the University of Chicago.

The pieces assembled for this exhibit are touring major American museums to arouse interest in the international effort to save a number of ancient Nubian monuments from being inundated by the waters of the Nile on completion of the Aswan Dam. Usually on display in the Cairo Museum, the King Tut treasures have never before been permitted to leave Egypt.

Tutankhamun was King of Egypt about 1350 B.C. His tomb, with its incredible treasures, was discovered by Lord Carnarvon and Howard Carter in November of 1922. The opening of the inner burial chamber of the Pharaoh in the following February stirred the interest of the entire world, both because of the intrinsic value of the tomb con-

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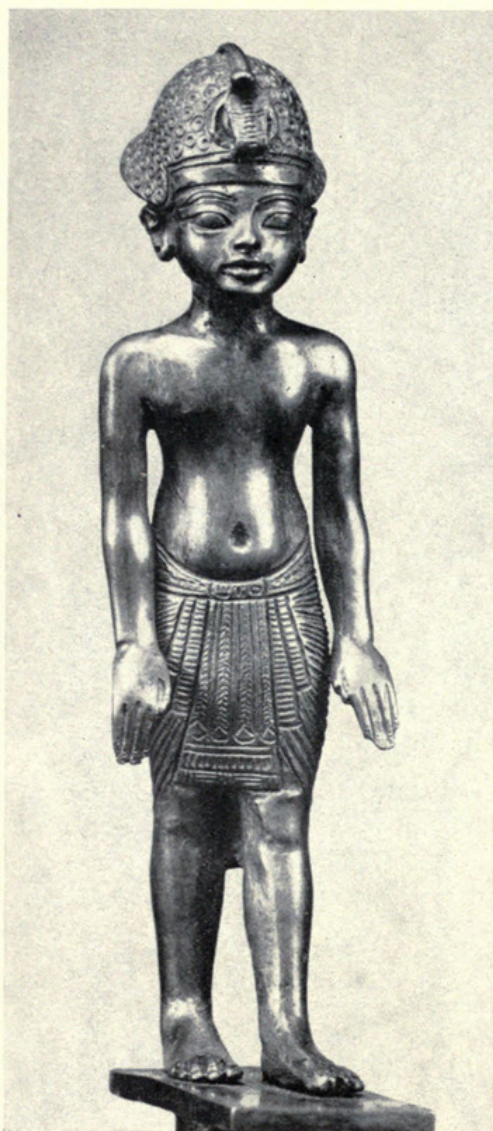
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Members are requested to inform the Museum promptly of changes of address.

tents and because they had been preserved, through more than thirty centuries, in all their pristine beauty.

From the more than 2,000 exquisite objects found in the tomb, the 31 pieces selected for the traveling exhibit are of particular interest because of their close association with the mummified body of the boy-king. Among them are his favorite hunting dagger and sheath of embossed gold, found in the mummy wrappings; a richly decorated miniature coffin of gold, inlaid with carnelian and lapis lazuli—one of four that held the ruler's internal organs; the ceremonial crook and flail, fashioned of gold and blue glass, which were the symbols of his power; jewelry taken from the body; the young king's walking stick, embellished with a portrait figure in solid gold; and many vases, chests, and





*Figure of young King Tutankhamun in solid gold embellishes a gold walking stick found in the tomb—one of 34 treasures from tomb that will be on display June 15 through July 15.*

statuettes of deities that would have significance in the Pharaoh's life beyond the grave.

Also on display will be several objects from the tomb of Sheshonq I (the Biblical Shishak); several pieces from the permanent Egyptian collections of the Oriental Institute and Chicago Natural History Museum; and a stone statue from the Egyptian Old Kingdom (about 2,500 B.C.) which was a gift from the United Arab Republic to President and Mrs. Kennedy at the opening of the exhibit in Washington, D.C. This statue forms a part of the traveling exhibit at Mrs. Kennedy's request.

The exhibit of Tutankhamun treasures was organized by the American Association of Museums with the cooperation of the Ministry of Culture of the United Arab Republic and the Cairo

Museum. It is being circulated in this country under auspices of the Traveling Exhibition Service of the Smithsonian Institution.

### Children's Art Exhibit

An exhibit of 50 paintings and drawings by young artists of the Junior School of the Art Institute will be displayed in Stanley Field Hall from May 5 through June 3 (see cover). As part of their regular course of instruction, students in the Junior School visit the Museum regularly to study plant, animal, and geological structures; forms of primitive art and design; and the art techniques of ancient or remote civilizations. The colorful and imaginative works selected for the show, entitled "A Child's World of Nature," were inspired by exhibits at the Museum. Later in the year, the exhibit of children's art will be circulated to other cities under auspices of the Traveling Exhibition Service of the Smithsonian Institution.

### Science Fair

Science projects designed by students of the Chicago area will be exhibited in Stanley Field Hall from 9 A.M. until 4 P.M. on Saturday, May 19, in the 12th Annual Chicago Area Science Fair. The young scientists who will explain their displays and demonstrations are students from the sixth grade through the final year of high school. They represent public, private, and parochial schools (as well as a number of youth organizations) located within a 35-mile radius of Chicago. The science exhibits will relate to living things (including man), geology, astronomy, matter, and energy. Awards will be presented at the end of the day on the basis of the student's knowledge of his project and on the attractiveness and originality of his exhibit. The fair is sponsored by the Chicago Area Teachers Science Association.

### Staff Lecture

The Northwestern University Geology Club heard Bertram G. Woodland, Associate Curator of Petrology, speak recently on "Methods and Results of the Analysis of Small Scale Structures in Metamorphic Rocks."

### Free Concert

The Chicago Chamber Orchestra completes its concert season in the Museum this year with its performance on Sunday, May 13, at 3:30 P.M. in the James Simpson Theatre. The conductor will be Dr. Dieter Kober. Recently the Chicago Chamber Orchestra was featured in a half-hour program on CBS television entitled "Music for a City."

### Longer Museum Hours

Beginning May 1 the Museum will be open from 9 A.M. to 6 P.M.

## PHILIPPINES EXPEDITION

*(Continued from page 5)*

are probably more closely related to honeyeaters than has been thought.

A young female hornbill from Mindanao had the head partly black, like the adult female, and partly rufous like the adult male. Examination of the skin showed that the bird was in moult, the rufous feathers being replaced by black ones. In birds generally, when the sexes are different, it is the female that both young resemble, but here we had an example of a species in which both young resemble the male. This phenomenon is not unknown, but it occurs rarely, and in widely separated families.

When Dr. Rabor and I were traveling on Siquijor Island, we discovered that the ruddy kingfisher, which lives in the forest, feeds to a considerable extent on snails. The bird opens the shell to get the meat by pounding the snail on a rock, a habit which is shared by no other kingfisher, so far as we know, and by very few other birds.

Also from our Philippine field work, and more especially that of Rabor, it seemed to us that the domestic fowl of the villages and the jungle fowl of the forest, though belonging to the same species, each lived on the same islands with very little hybridization. Apparently they are kept separate by their respective habitat differences. Here we seem to have an example of an unusual state of affairs for birds: two subspecies living in the same area, but in different habitats.

*(Continued on next page)*



(Continued from page 7)

Deforestation and other attendant changes have caused the extinction of island birds, as is especially well known for the West Indies and the Hawaiian Islands. No such cases were known from the Philippines. But after extensive field work on the island of Cebu, from which most of the forest has gone since Magellan landed there early in the 16th Century, Dr. Rabor decided in 1959 that all but one of the ten endemic Cebu forest birds had disappeared with the forest. Among the birds not seen since 1906 was the golden washed hanging lorikeet. However, we have since found that it existed up until 1930, for about then a considerable number were brought alive to Europe and the United States as cage birds. This was brought to our attention by Mr. Karl Plath, formerly of Brookfield Zoo, who, reading Rabor's account, brought to us an example of one of these 1930 birds which he had had alive for a time.

The destruction of forests, especially in the lowlands, lends urgency to some collecting, notably on Panay and the Romblon-Tablas group. The Sulus, with such striking endemics, are unfortunately so filled with unrest as to make work there impractical, and the same is true for parts of Palawan and southeastern Mindanao. But there are still parts of Palawan that would be worth while.

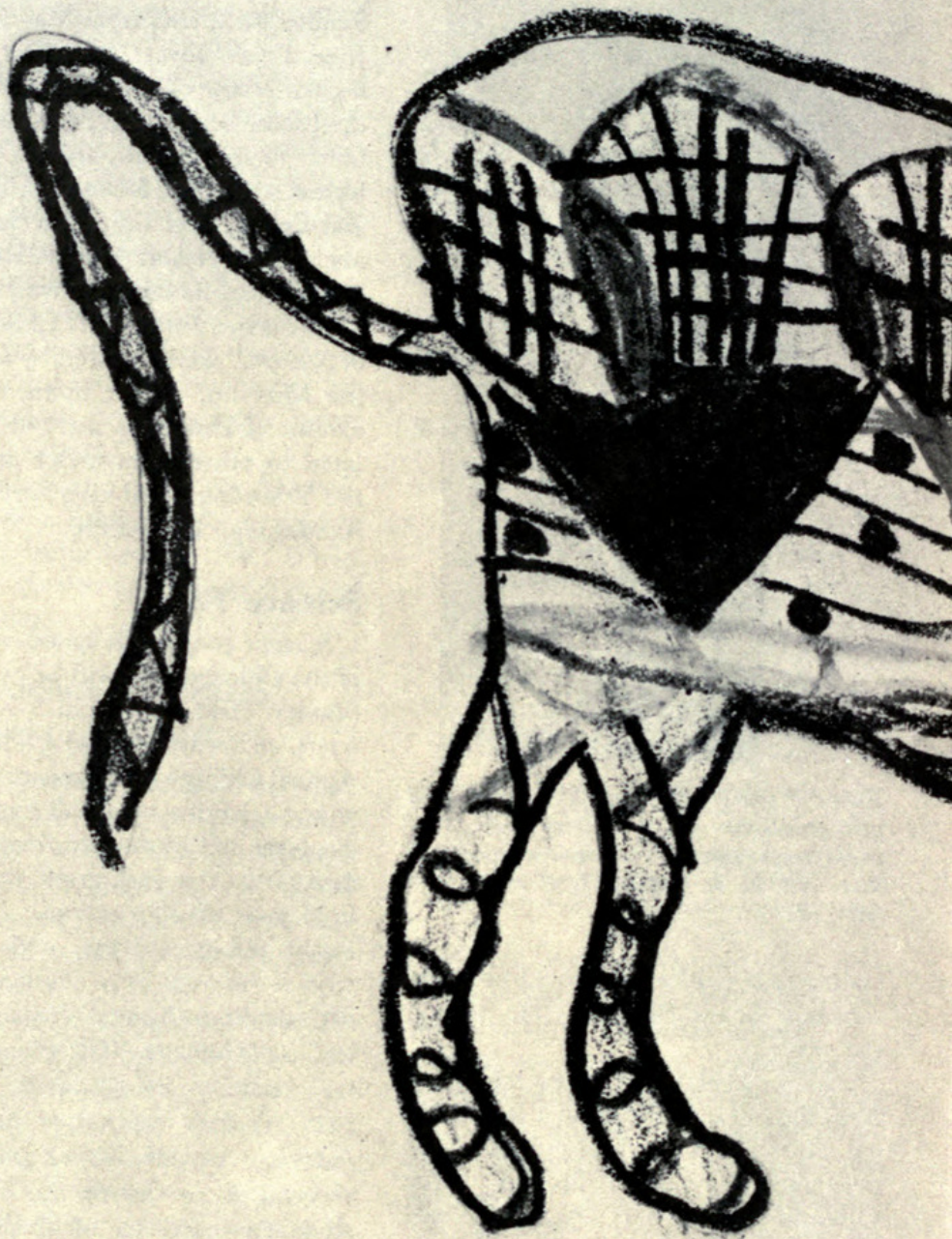
The new species discovered in recent years from Luzon, Negros, and Mindanao, some from areas "well collected," may serve as a guide to indicate that almost any upland forest in the Philippines may yield more new forms or range extensions. And the abundance of small islands in the Archipelago makes an ecological study of island effects an inviting prospect.

The above will give some idea of the progress that Dr. Rabor and I have made in the study of Philippine birds, the use we have made of the collections, the information we have read from skins and observations, and made available to the scientific world. The work is continuing, but is never done.

In planning for the future, we must keep in mind that our space, material, money, and also time (for our years are numbered) are limited; and that I have interests in other parts of the world, too!

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By Deborah Axner

From "A Child's World of Nature": An exhibit of children's art  
Stanley Field Hall, May 5 through June 3





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