A COMPREHENSIVE state-wide program of wild life conservation has been undertaken in Missouri. To provide places for raising deer, wild turkey, quail and pheasants, and likewise provide camp grounds in the Ozark Mountain district, the state has purchased 36,000 acres of land, at a cost of about $500,000, divided into 12 separate tracts. These are designated as state parks. Ninety per cent. of the area of these parks is devoted to game propagation. Most of the large springs in the Ozarks and a large percentage of its clear and rapid streams either originate or flow through state parks.

UNIVERSITY AND EDUCATIONAL NOTES

THE contract has been let for the construction of the Martin Maloney Memorial Laboratory for medical research work at the University of Pennsylvania. It will be erected at a cost of $500,000.

WITH the organization and establishment during the coming year of the Giannini Foundation for Agricultural Economics at Berkeley, another division of research and instruction will be added to the College of Agriculture of the University of California. Another unit of the agricultural building group, to cost approximately $500,000, will be constructed shortly to house the foundation and to provide temporary additional space for other departments of the college. An endowment of approximately a million and a half dollars will support the work of this foundation. Chief divisions of instruction will be in the fields of plant science, animal science, entomology and parasitology, agricultural economics and forestry.

DEAN J. H. SKINNER, of the school of agriculture of Purdue University, Indiana, has been appointed director of the Purdue University Agricultural Experiment Station and of the agricultural extension department of the university, to succeed Dr. G. I. Christie, who has resigned, after twenty-three years of service, to become president of Ontario Agricultural College at Guelph.

PROFESSOR JAMES H. HANCE, head of the department of geology at the Agricultural and Mechanical College at College Station, Texas, has been appointed dean of the Oregon State Agricultural College, to succeed Dr. Charles E. Newton, who recently resigned.

AT the University of Chicago, Drs. Warder C. Allee and Carl R. Moore, zoology; Edwin A. Burtt, philosophy; W. J. G. Land, botany; Harvey B. Lemon, physics, and Frank E. Ross, astronomy, have been promoted to full professorships.

RECENT promotions to full professorships in the University of Illinois include Dr. Edward A. Boyden and Dr. Otto F. Kampmeier, of the department of anatomy of the College of Medicine in Chicago.

DR. ALFRED HUETTNER, assistant professor of zoology at Columbia University, has been appointed associate professor of biology in the Washington Square College of New York University.

DR. ROBERT DONALDSON has been appointed to the Sir William Dunn chair of pathology at Guy's Hospital Medical School, London. Dr. Donaldson is the author of "Practical Morbid Histology" and other publications.

DR. A. M. DRENNAN, professor of pathology in Otago University, Dunedin, has been appointed professor of pathology in Queen's University, Belfast, Ireland.

DR. JOHANNES LINDWORSKY, professor of psychology at the University at Cologne, has been called to Prague.

DISCUSSION

HELODERMA SUSPECTUM, AUTOMOBILE TOURISTS AND ANIMAL DISTRIBUTION

IN a note in SCIENCE, Mr. P. F. English[1] records two instances of the finding of large lizards at considerable distances from their known native habitats. One of these occurrences is that of *Heloderma suspectum*, the Gila monster, concerning which the author remarks that "any attempt to explain how this lizard found its way to Wheelock [Texas], some four or five hundred miles from its native haunts, would be mere guesswork." Concerning the other, an *Iguana tuberculata* from Central America taken in Texas, admittedly a still more difficult occurrence to explain, he says, "How such a reptile could find its way from its tropical and arboreal habitat in the jungles to the almost treeless plains of Childress, Texas, is an interesting speculation."

The present writer heartily agrees to the interesting character of the speculation induced, but believes that an explanation for the first, if not the second instance, may be offered which will be much better than "mere guesswork." Incidentally a new, or if not new, little considered, factor in animal distribution may be given point.

During the course of a dozen years in my present location I have received from interested and curious persons many specimens of the peculiar or unique animals of the southwest; and there have passed through my hands, mainly from these sources, probably nearly one hundred Gila monsters. During that

[1] English, P. F., "Notes on *Heloderma suspectum* and *Iguana tuberculata*," SCIENCE, Vol. LXVI, No. 1697, p. 37.

period of time, though my work has taken me afield frequently, I have in person come across barely a half dozen of these conspicuous and not very swift lizards. This indicates, first, the extent to which people gather up specimens of animal life that excite their curiosity, and transport them in a spirit of helpfulness, curiosity or cupidity. (I have been asked to pay ten dollars for a very ordinary Gila monster, and been solemnly assured that they were worth one hundred dollars.) Secondly, the modern auto tourist is likely to tire of and release his "specimen" unless he can dispose of it to advantage. I have been the recipient of two *Helodermas,* each of which had been carried for some time by auto touring parties, and for distances of not less than two hundred miles. Further, such a specimen is frequently carried tethered somewhere on the outside of the car by an insecure noose about its neck or leg. Tourists in this region often express a desire to take a "Gila" "back home," anywhere from five hundred to fifteen hundred miles from here—and no doubt many of them attempt to do so. A certain dealer in live animals sells surprising numbers of them for this very purpose.

The finding of the specimen in Texas is no surprise to me. It seems much more certain than "guess work" to assume that such an animal, or any interesting animal of readily transportable size, found even hundreds of miles from its native home, has been carried most of the distance by rail or auto, especially the latter. The *Heloderma* mentioned might easily have wandered from the nearest main highway, even though the distance be considerable, for this lizard is tenacious of life, and that locality would not, I believe, be a particularly unfavorable environment for it.

The principles involved in the foregoing statements have many and various illustrations, as every inspector at a horticultural inspection station on a main auto highway in the southwest can testify. The auto tourist carries everything interesting from where he finds it to some other place; anything from a "horned toad" to an entire cotton plant, leaves, bolls, boll weevils and all. The *Iguana tuberculata* record is, to be sure, somewhat less likely to be the result of transfer by auto, but not unlikely to have come up by train. I have now a live *Iguana sp.* which recently arrived in Tucson in a bunch of bananas by rail from the west coast of Mexico. A few years ago I was the recipient of a live five and one-half foot *Boa imperator,* picked up by an autoist just beyond the border town of Nogales, Sonora. This, I should judge, came up from Central America nearly to the United States by train, thence it certainly came another seventy miles by auto. Mr. Roy McCain, of Tucson, relates that, while hunting a few miles northwest of Pantana, a station about thirty miles east of Tucson, in the foothills of the Rincon Mountains, he met a large lizard which he killed with a stick. This measured three feet in length and must have been an *Iguana sp.,* though unfortunately it was not saved. This was in October, 1927.

I have now alive in my laboratory an opossum, carried into this new (and probably unfavorable) environment from Arkansas. Its captor chanced to tire of it just at this point, but might equally well have elected to turn it loose in some favorable looking spot in the state—or in California. It is known that opossums have previously been released in this region. Arizona (likewise California), has a cordon of horticultural inspectors stationed at strategic points for intercepting and inspecting autos coming into the state. The findings of these inspectors, plus the other instances cited, have served to emphasize for us here the possibilities of auto traffic as a factor in animal distribution in a manner which, perhaps, has not come forcibly to the attention of biologists in many other states. The cotton plant incident is a fact from the experiences of the inspectors.

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THE HALL EFFECT IN SINGLE METAL CRYSTALS

IN spite of the very great amount of work which has been done on the Hall effect the fact that we have not yet a satisfactory explanation of this and its allied phenomena justifies further work.

As a result of observations which I made some years ago on tellurium, I came to feel that the crystal structure of metals must play a much more important part in the Hall effect than had been recognized. In fact, I expressed doubt as to whether there would be any Hall effect as we find it in metals unless that metal is crystalline. Since then, thin films of bismuth have been obtained in the amorphous state and no Hall effect was found. It appeared, however, as soon as the film, by suitable heat treatment, became crystalline.

Not much work has been done on single metal crystals and yet it seems that this should be a particularly promising line of attack. Some time ago, Van Everdingen and others showed that the Hall effect is different in different directions in a large crystal of bismuth. Two years ago I studied the Hall effect in single copper crystals, the crystal being in the form of a pencil about six millimeters in diameter and ten centimeters long, and the effect appeared to be independent of the direction.

More recently, I have made measurements on a number of specimens of silicon steel, the alloy of 3.8