

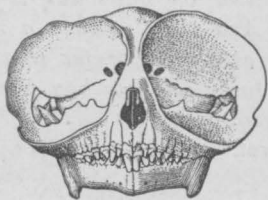


Here is Man's distant cousin and fellow-primate, the tarsier of the Philippine Islands, whose long-dead forbears were our first relatives in California. The photo, courtesy of J. E. Eckman, shows the tarsier in his native haunts, clinging to a wild fig branch. About three-quarters natural size

# Our Earliest Relatives in California

By

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Above is an actual-size sketch of the jaws and skull of a present-day spectral tarsier of Borneo. Compare the shape of the skull in the sketch with the head in the photo above, and note particularly the exceptionally large size of the eye-sockets

**I**N THE tropical jungles of the Philippines, Celebes, Sumatra and Borneo lives a shy, curious, goggle-eyed little creature, no bigger than a small squirrel. He looks somewhat like a monkey, with large bare ears, long tail and a coat of soft brown fur. On the under surfaces of his fingers and toes he has round sucker-like disks by which he fastens himself to the trunks and branches of his arboreal world. Certain bones in his feet are elongated, which allows him to jump nimbly from branch to branch and from tree to tree.

This little mammal is called the tarsier, and he belongs to the Primates, the group of mammals to which not only Man but also apes, monkeys and lemurs belong.

Fifty million years or more ago, in the Eocene or dawn epoch of the Age of Mammals, lemur-like forms known as tarsiods and having a number of important characters in common with the tarsiers of today lived in North America. Recently their fossil remains were dis-

covered in Eocene formations in Southern California.

Although the tarsiods claim no close kinship with Man, they were nevertheless primates and as such were undeniably our earliest relatives on the California scene. The ancient tarsiods were smaller than the present day tarsier, but such parts of the tarsiods as have been preserved—fragments of skulls, jaws and teeth—show a surprising degree of similarity to the living type. We can assume, therefore, that the habits of the ancient primate were similar to those of today's tarsier, and the little Malayan creature becomes interesting to us as a living representation of what our earliest Californian relatives looked like.

The most striking peculiarity of the tarsier's face are his large eyes, which give him a strange, ghostly look. His hind feet remind one of the hind feet of a frog, and he gets the name tarsier from the great elongation of two of the bones in his ankle, or tarsus.

When fastened to a trunk or resting upon the branch of a tree the tarsier can rotate his head 180 degrees from normal position, and thus is able to look directly backward. Fairly active at night, the tarsier sleeps during the day and may be found rolled up in a ball in the crotch of a tree. It feeds chiefly on insects and small reptiles.

In America, remains of these extinct creatures have been described from Eocene deposits now exposed in the intermontane basins of the Rocky Mountains. The presence of these creatures in Southern California not only extends their known distribution in time and space for North America, but it marks also their most westerly range on the continent.

Much of this important early life record of the Age of Mammals in California comes from the Sespe formation, a characteristic land-laid accumulation of sediments, often red or maroon in color. The Sespe formation derives its name from the typical outcrops on Sespe Creek in Ventura County, although exposures of the formation occur in many other places in Southern California.

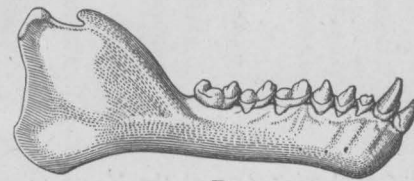
At several locations north of the Simi Valley the Sespe deposits have yielded extraordinarily rich assemblages of fossil animals. Extinct tarsiods are found in these assemblages, associated with such forms as small armored lizards, titan-theres, aquatic rhinoceroses, primitive cursorial rhinoceroses, tapir, many ancient even-toed hoofed mammals, rodents, insectivores, opossums and carnivores.

The presence of tarsiods, insectivores, opossums and some of the rodents leads us to believe that when these animals were living in Southern California the land was covered with lush forests and the weather was definitely tropical. In fact, the evidence uncovered in this portion of the Sespe formation shows that in those remote times Southern California weather was warm, moist and favorable to the growth of such forests as we find today in the tropics and sub-tropics, where the rainfall approaches 100 inches a year. Furthermore, this is in line with evidence obtained from geological and paleobotanical studies in other parts of Western North America.

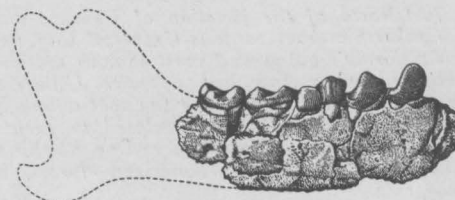
The fossil animals found in the Sespe formation are for the most part totally unlike those living in the American region today, but in most instances include representatives of groups which evolved into more advanced forms in later geologic time. It is conceivable that during the period of their existence the ancient tarsiods may have adjusted their habits and their physical characteristics to their surroundings, in much the same manner as the living tarsier is adjusted to its environment in the East Indian region. They were perhaps similar to the modern forms in food habits, and it is interesting to speculate to what extent the small armored lizards found fossil with the tarsiods at the California localities may have furnished one source of food.

With large eyes, and with a primate brain superior in its potentialities to those of the animals with which the tarsiods were associated, these diminutive creatures surveyed their domain—a forest primeval. They were apparently destined never to leave the tree world. Their complete disappearance from California and all North America, in later geologic times, seems to have coincided with changes in climate and with the narrowing down of the extent of California's tropical forests.

Not until some 50 million years after the passing of the tarsiods does another primate—Man—appear on the California scene. But Man's advent comes only after the world and its life have undergone profound changes.



B



A

*Below (A) is a fragment of the right half of the lower jaw of a fossil tarsiod from the Sespe deposits; above (B), the lower jaw of a modern spectral tarsier. The noteworthy resemblance in construction and pattern of the teeth suggests that the food habits of the long-dead tarsiod may have been similar to those of the present-day spectral tarsier*



*Here again is the present-day tarsier of the Philippine Islands clutching his wild fig branch. This portrait clearly shows his relatively large head, eyes and ears and the human way in which he grasps his fig-tree branch. The tarsiods found fossil in California probably did not differ greatly in appearance from this creature. Photograph by J. E. Eckman*