

several times and then was joined in the large bignonia vine by the mate, and copulation took place. Then they flew to the lime tree and from there to a pendant cluster of foliage at the end of a limb of a large eucalyptus tree and by doing so revealed the location of the nest which seemed to be almost completed. The nest was about eighteen feet from the ground and about one hundred feet from the windows and was well concealed in the foliage.

The single bird, and once in a while both of them, continued to give battle at the windows, but with diminishing frequency as their family cares increased. April 24, they were still feeding the young in the nest; but on May 2, the nest was found to be torn open and contained only an infertile egg. Crows were the probable depredators, but I do not know if they got the young Bush-tits or if the latter had safely left the nest. Neither parents nor young were observed at this time.

It seems worthy of note that such gregarious birds as Bush-tits should "shadow-box," and that, at first, the female should be as active in it as the male. The instinct to defend the selected territory during the nesting period must predominate over the instinct to flock together that is so conspicuous a part of the behavior of these birds during the rest of the year.—JOHN MCB. ROBERTSON, *Buena Park, California, May 5, 1935.*

Status of *Toxostoma redivivum* in the Rancho La Brea Fauna.—In connection with a comprehensive study of the skeleton in thrashers, I have had occasion to examine the cranial fragment of *Toxostoma* (no. 29515, Mus. Paleo. Univ. Calif.) doubtfully referred to *T. redivivum* by A. H. Miller (Univ. Calif. Publ., Bull. Dept. Geol. Sci. 19, 1929, p. 11).

Crania of the several species of the genus *Toxostoma* may be distinguished one from another by the position and character of the lateral ridge of the suprêmeatic process and by the consequent relative extent of the two areas which it separates—the "temporal fossa" and the suprêmeatic area. Only in *redivivum* and *dorsale* does the suprêmeatic area approximate the "temporal fossa" in width; these two species, however, may be distinguished readily by the much smaller cranium of *dorsale*. The specimen in question has the temporal region perfectly preserved on the right side, and it is indubitably of the *redivivum-dorsale* type. The brain case is sufficiently preserved to indicate its larger size, and there can be no doubt as to its identification as *redivivum*, which species thus may be assigned definitely a place in the avifauna of the Rancho La Brea Pleistocene.—WILLIAM L. ENGELS, *Museum of Vertebrate Zoology, Berkeley, California, June 20, 1935.*

Some Feeding Habits of the Western Sandpiper.—The Dumbarton bridge near Palo Alto, California, crosses the tidal flats in the southern part of San Francisco Bay. On either side of the bridge proper are long approach roads, leading across about three miles of mud flats and shallow water to the east and almost two miles of marshy ground and sloughs to the west.

On May 11 and 13, 1935, large flocks of Western Sandpipers (*Ereunetes mauri*) were seen on the asphalt pavement along the three miles of road east of the bridge (none was on the west approach road). Some of the flocks contained 200 or more birds. As the automobile approached each flock, the birds flew away together and at once returned to the road behind the car. In addition to the western sandpipers there were a few Brewer Blackbirds and Horned Larks feeding at the edge of the road or in the road. Feeding on the water were large numbers of Northern Phalaropes, and in the air were many Cliff Swallows. On June 17, about 200 Brewer Blackbirds were feeding along the road, mainly on the pavement.

The Western Sandpipers on the pavement were very active, making short runs here and there as they caught their food. We stopped to examine the pavement and found it teeming with brine flies (*Ephydra millbrae*). This is a sluggish fly which often moves only a foot or two when disturbed, and is easily captured. As no other insects were noted on the pavement it seemed certain that the sandpipers were feeding on this fly.

This conclusion was verified by stomach examinations made of two of the birds which had been killed by passing automobiles. All of the stomach contents seemed to consist of fly remains, although only a few of the flies in the stomach were sufficiently entire for certain identification. There was a thin scattering of sand mixed

with the stomach contents. On first seeing the sandpipers, we had thought they might be seeking gravel on the pavement, but we found that there was practically no loose gravel on the asphalt.

On the west approach road, where there were no sandpipers, flies also were practically absent, due perhaps to less water along the road here than along the east approach road. The absence of flies here seemed to explain the corresponding absence of sandpipers.

The stomach of a Cliff Swallow picked up on the road contained a mass of food which seemed to be identical with that in the sandpiper stomachs. It seems probable that the horned larks and blackbirds and phalaropes were also feeding on these flies, although evidence here is circumstantial. It would seem that the many blackbirds on the pavement on June 17 were almost certainly feeding on the flies. On the water where the phalaropes were feeding large numbers of these flies floated.

Although the two or three thousand sandpipers noted were practically all feeding on the pavement, the flies were more abundant in the grass and on the lumpy shore bordering the road. In one place on the shore the flies were so numerous that their wings made the ground appear glassy. Since food was abundant in all the habitats (pavement, grass, and lumpy shore) some other factor than presence of food seemed to be determining the habitat choice of the sandpipers.

In feeding, a sandpiper darted after the fly which it had started, seizing it where it lit a few feet away. The smooth pavement facilitated this sort of feeding activity, permitting the bird to run freely after the food and to keep it in sight. If the feeding ground were lumpy, running would be difficult and the bird might lose sight of the fly if it should light behind a lump. The habitat preference of the birds was definitely advantageous to its mode of feeding, suggesting that it was determined primarily by freedom of movement, and also by continuous visibility of prey.—ADOLPH MURIE, *Wildlife Division, National Park Service*, and H. D. BRUCE, *U. S. Forest Service, June 24, 1935*.

Magpie-jay Robs Nest of Derby Flycatcher.—Rarely have I observed any species of bird approach nesting sites of the larger tyrant flycatchers; and heretofore, the few that did venture near, were promptly driven off. While hunting near Puerto Humo, province of Guanacaste, Costa Rica, April 17, 1935, my attention was drawn to a large bird as it alighted on a large globular nest, set into top branches of a small acacia tree growing in a semi-wooded pasture. Approaching the site, the bird was recognized as a Magpie-jay (*Calocitta formosa pomposa*), and the nest as of the Derby Flycatcher (*Pitangus sulphuratus derbianus*). The jay was vigorously endeavoring to penetrate the interior of the nest, using both bill and claws. It may be remarked here that the genus *Pitangus* has the nest entrance on the side.

The quest of the jay was successful, for within three minutes it flew away with an egg speared on the bill. A pair of derbies sat during this period in nearby trees, uttering their "war-notes"; but only once did one of these probable owners launch an assault against the marauder, pecking the jay on the back of the head, which appeared to give the latter little discomfort.—AUSTIN SMITH, *Zarcero, Costa Rica, May 9, 1935*.

NOTES AND NEWS

The annual meeting of the American Ornithologists' Union will be held this year, October 21 to 24, at Toronto, Canada, under the auspices of the Royal Ontario Museum of Zoology. Mr. L. L. Snyder, of the staff of this Museum, is Secretary of the Committee on Arrangements, and from him information can be sought as to hotels, etc. The delightful autumn season, the intellectual profit from the programs, the social opportunities

afforded, the frank hospitality of the Canadian people, are all features attested to by previous occasions of the sort. We advise attendance especially by bird students who have not before attended a Canadian meeting of the A.O.U. All those who have, need no urging.—J. G.

FAMILIAR BIRDS OF THE PACIFIC SOUTHWEST is the title of a new bird guide, by Florence V. V. Dickey, recently published