

FROM FIELD AND STUDY

Thrasher Psychology.—On the morning of June 13, 1930, in Balboa Park, San Diego, I watched a California Thrasher (*Toxostoma redivivum*) searching for food, and the actions of this bird seem to me worth recording. It was crippled in the right leg by a wound on the heel, and also half of the tail feathers were missing. The injured leg was not used, but was carried drawn close up to the body. When first seen, the thrasher carried in its beak a large gray lepidopterous larva of the type generally known as "cutworm". As I watched, it deposited the insect on the ground and, with a few quick strokes, sunk a pit in the soft sand to the full length of its beak. Failing to uncover any food, the bird picked up the caterpillar which it had dropped and moved to a new site. The thrasher did not seem to dig at random but rather appeared to select spots with care. However, during the ten minutes or so that I watched, it tried some fifteen or twenty different spots, all within the radius of four or five feet, but failed to make a find. The cutworm was picked up and carried from one site to another as the work continued.

The big beak served admirably for digging in the soft sand which, during the excavating, was often thrown several inches. Finally, the bird accidentally covered up the larva which it had been carrying, when, with scarcely a glance around, it moved to a new site and continued the search. No attempt was made to rediscover the lost titbit, but the bird continued the futile digging of pits. Eventually the search was abandoned and the thrasher flew away.

During the first part of these observations I was impressed with what seemed to be ability on the part of the thrasher to remember each time to pick up the cutworm and move it from site to site. This does not, however, explain its subsequent indifference to the loss of the insect. Further thought has convinced me that the cutworm was moved each time, not through the thrasher's having remembered its possession, but rather because the bird's quick eyes each time discovered the object before the move was made. When the cutworm became covered up and no longer visible, there was no memory stimulus to cause the bird to search for its loss; but instead it continued its activities as though the incident had not occurred.

To me this would indicate that the memory faculty is either completely wanting or but very poorly developed in the California Thrasher.—FRANK F. GANDER, *San Diego Society of Natural History, Balboa Park, San Diego, California, December 26, 1930.*

The Kingbird Nesting over Water.—In North American ornithological literature there are many references to the nesting habits of the Kingbird (*Tyrannus tyrannus*), but in only a few instances is attention called to the fact that this flycatcher sometimes selects for a nesting site a tree, stump or bush that is surrounded by water and at more or less distance from dry land. One such reference is found in a paper on the birds of Mason County, Michigan, where the author, Dr. R. W. Chaney (*Auk*, 27, 1910, p. 274), remarks that the Kingbird might be considered "almost aquatic", as it "invariably" built its nest on a stump that was surrounded by water, "often at a considerable distance from the shore"—a remark that has been quoted by other writers. Of the references looked up by the present writer, in only one is given any definite idea of the distance from shore to the nest, in this case "from 25 to 200 feet." Another matter omitted is the height of the nest above the water, which may have been sufficient to eliminate all danger of submergence from floods.

Under these circumstances the conditions under which the Kingbird was nesting in the Kootenay Valley, southeastern British Columbia, seem worthy of mention. The Kootenay River flows through this valley on its way to the lake of the same name, with so little fall for a long distance that the water of the spring freshets backs up for many miles and spreads out upon the bottom-lands over a wide area, the crest of the flood usually occurring toward the middle of June. A party from the California Academy of Sciences visited this region in the spring of 1928, when the flood was not only a very high one but came unusually early, the peak being in the third week of May.

On the banks of the Kootenay River stand cottonwood and pine trees, with small bunches of these trees scattered out like islets in the flood, while dotted over the