

**Symbiotic Feeding of Snowy Egrets with Cattle.**—The remarkable symbiosis between Cattle Egrets (*Bubulcus ibis*) and the larger hoofed mammals, both domestic and wild, has long been common knowledge. However the fact that a similar relationship exists between Snowy Egrets (*Leucophoyx thula*) and domestic cattle seems to be unrecorded in ornithological literature.

Here in Florida, Snowy Egrets regularly consort with grazing cattle while feeding. This trait I have noticed repeatedly in the region around Gainesville, and it is also very conspicuous in the cattle-raising district along the west and south shores of Lake Okeechobee. In these areas almost every herd of cattle is accompanied by flocks of egrets.

The relationship between the birds and the cattle is a particularly close one. In the Gainesville area I have spent many hours watching them in order to learn something of the nature of the association. The attraction for the egrets is obviously the insects—apparently mostly grasshoppers (Acrididae and Tettigoniidae)—which the cattle frighten from the grass as they walk and graze.

Usually one to three egrets accompany each cow, although I have seen as many as seven and eight. When a cow is grazing, the egrets often take a waiting stance in front of or beside the cow's head, facing it, with their beaks six inches to a foot from the cow's muzzle. Another frequent position is immediately beside the fore- or hindlegs, or underneath the cow's belly behind the forelegs. The cattle seem completely indifferent towards the egrets, and when they move, the birds are often hard-pressed to avoid being stepped on. Cattle Egrets have been reported perching on the backs of cattle, a habit I have not observed in Snowy Egrets, due perhaps to the presence of fenceposts on which they frequently perch.

When an insect is flushed by a grazing cow, the egret either catches it on the wing or grabs it as soon as it lands. On a few occasions I have seen egrets pick grasshoppers from the sides of cows.

While many Snowy Egrets enter into this commensalism, it is purely facultative. On Payne's Prairie, a 13,000-acre wet prairie south of Gainesville, each large herd of cattle may be accompanied by hundreds of egrets, yet there are as many or more egrets feeding in the nearby sloughs and marshes away from cattle.

There seems to be some daily and seasonal variation in the extent of this association. It is more frequent in mid-morning (8:00 to 11:00 A.M.) and late afternoon (3:00 to 5:00 P.M.), corresponding with the periods of most active grazing. If a cow stops grazing and lies down, its accompanying egrets immediately stalk off to another cow. In North Florida at least, the habit is more frequent in late summer and drops off during the winter, a fact doubtless correlated with the abundance of insects.

Several interesting questions arise concerning this symbiosis. Is it mutualistic, or merely commensalistic? Information on Cattle Egrets indicates that they occasionally pick ectoparasites from the cattle. I have not observed Snowy Egrets doing this; lack of severe tick infestations could be a factor, but I do not believe egrets would deliberately search for such small prey. I have seen them pick grasshoppers from cattle, and they may take biting flies (Tabanidae) in the same manner.

Another possible benefit to the cattle, definitely reported for Cattle Egrets, is to warn them of approaching danger. Obviously under conditions of domestication this is of no concern to the cattle, but some of my observations on this point are of interest. Whenever I openly approached groups of cattle, the egrets always took flight when I was still some distance away, but the cattle expressed only mild curiosity on my closer approach. These reactions were no doubt due to the fact that the cattle are domestic, the egrets wild. However, when I attempted to stalk them behind

cover, the cattle invariably noticed me first, sometimes bolting and putting the egrets to flight, whereas I could approach unseen very close to the egrets when the cattle did not alarm them. Thus it seems that under some circumstances it may be the egrets which benefit from the reaction of the cattle.

Speculating on the origin of this symbiotic association, it is interesting to note that the ranges of Snowy Egrets and the larger indigenous grazing animals were mostly mutually exclusive. (The egrets do not associate with smaller ungulates. I never saw them with a herd of goats kept in a pasture adjacent to one where I made many of these observations, nor with sheep on Payne's Prairie.) Snowy Egrets have obviously acquired this habit since the introduction of domestic cattle into Florida. Why Snowy Egrets developed this habit, while none of our other herons did, is an unanswered question. Although seven other species of herons are abundant in this region, and some, especially Greater Egrets (*Casmerodius albus*), regularly feed in pastures, I have never, with one exception, seen any of them associating with cattle. The one exception was an immature Little Blue Heron (*Florida caerulea*) which was with a small group of Snowy Egrets.

Here Snowy Egrets fill an ecological niche which is occupied in the Old World by Cattle Egrets. Since the colonization of Florida by the latter species in 1948, the interactions between the two should be well worth investigating.—DALE W. RICE, *Department of Biology, University of Florida, Gainesville, Florida.*

**Habitat of the Screaming Seedeater (*Sporophila caerulescens*) in Brazil.**—In 'The Auk' for October 1952 (69: 433) Dr. A. O. Gross writes of the establishment of Hick's Seedeater, or the Variable Seedeater, (*Sporophila aurita aurita*) as a breeding bird on Barro Colorado Island, Panama Canal Zone. He expresses some surprise that the species, a typical bird of open grassy country, should have found and settled in such a relatively small grassy area as exists on the island.

In Brazil, in the region of Rio de Janeiro, and elsewhere, a related form, *Sporophila caerulescens*, occurs very commonly. It too is essentially a bird of open country, being particularly abundant along grassy roadsides. But I also find it in relatively small and isolated areas. One such area occurs on the summit of a low hill in the Parque da Cidade, Rio de Janeiro, where there is a cleared grassy space of perhaps two acres, completely surrounded by heavily wooded hillside. Here I nearly always find the Screaming Seedeater singly or in small flocks of mixed adults and juveniles; and it may very well breed there, though to date I have found no nest.

I also found a seemingly resident male in the almost grassless garden of a house completely surrounded by "mata" near the top of Corcovado Mountain in the city of Rio de Janeiro, at an elevation of about 600 metres. This bird was heard singing all day during my week-end visit to the house and seemed to have his singing-tree established. No female was seen. This was January 24 to 26, 1953.

So it would appear that at least this species of Seedeater and *Sporophila aurita* travel far and over inhospitable country to find and establish their "niches."

This fact is particularly puzzling here in view of the great stretches of deforested and now grassy country which occur in the two states with which I am familiar, Rio de Janeiro and São Paulo, and which would seem to preclude the necessity of the species seeking small isolated areas for breeding.

Incidentally, *Sporophila caerulescens* has a pleasing song which is also reminiscent to me of that of the Indigo Bunting, as was that of the Variable Seedeater to Dr. Gross. And I have never heard it "scream," and trust that some recent publication has given it a more appropriate common name. MARGARET H. MITCHELL, COBAST, *Caixa Postal 4965, Rio de Janeiro, Brazil.*