conventional killing jar on existing 6-w light traps (Barnes et al. 1965) was designed. This note describes this inexpensive but effective collecting bag.

MATERIALS AND METHODS.—Six-mil polyethylene plastic was selected for making the bag.

Fig. 1 shows the bag's essential dimensions. We first marked out the side panel on a doubled sheet of plastic with a felt-tipped pen. The 2 side pieces were then cut out and seamed together with a commercial heat sealer. A 10- to 12-in. open seam was left on 1 side at the top for the light-trap cord. Additional vertical seams were made in the center of each of the 2 side panels to provide stability. The final shape was a semirigid truncated pyramid below a cylindrical top.

The square bottom panel, fitted with a 6×6-in. central drain of 32-mesh Saran® fabric (glued and taped in place), was then heat seamed to the sides. About 20–30 min was required to complete each bag.

DISCUSSION.—This collecting bag was made to slip onto the funnel of the light trap (Fig. 2). It was fastened to the funnel rim with binder clips, then tied at the funnel mouth with a cord to prevent insects from escaping upward.

In use, the entire trap was attached to a rope and raised to a location in a tree crown. When the desired insects were caught the trap was lowered, the fasteners were taken off, and the bag was slipped down a few inches and closed by tying the cord.

Specimens trapped in the bag were anesthetized in the laboratory with CO_2 to permit sorting and sexing. In our studies as many as 26 live *Dioryctria* spp. were caught in a single night's trapping. Many other insects also were trapped in good condition for rearing and/or identification.

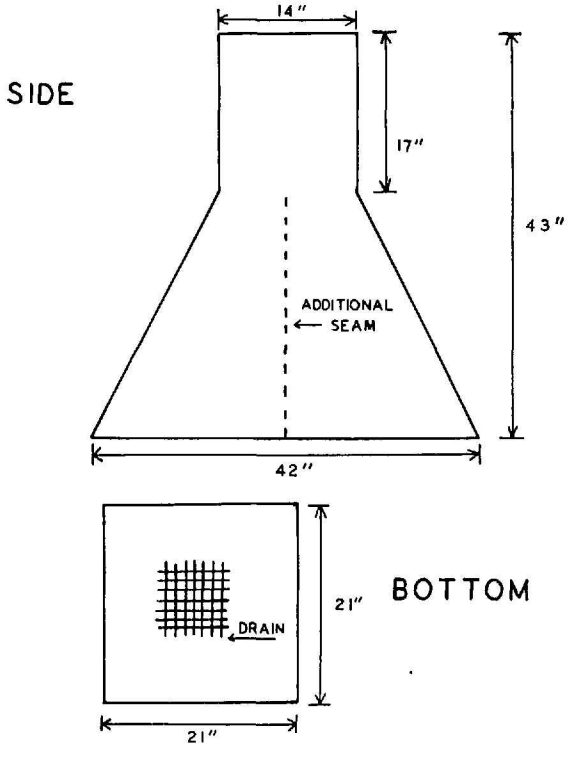

FIG. 1.—Diagram and dimensions of the light-trap bag.

FIG. 2.—An assembled collecting bag attached to the funnel of a 6-w unidirectional black-light trap. (Patterned after Barnes et al. 1965).

REFERENCE CITED

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Arthropods in the Diet of the Cattle Egret, *Bubulcus ibis*, in Southern Louisiana[1]

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The cattle egret, *Bubulcus ibis* (L.), was first reported from Louisiana in October 1955 (Lowery 1960). During the past 3 years the population of this species has increased greatly, and the birds are seen during the summer months in large numbers all over the State. As winter approaches most of the birds leave the State, but a few can be seen in the southern portions throughout the winter.

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Table 1.—Contents of the ventriculus of cattle egrets captured at indicated dates. 1966.

Animals found	Date and (in parentheses) no. of egrets examined								Totals (36)
	June					July		August	
	3 (3)	13 (3)	20 (1)	23 (2)	28 (7)	1 (9)	27 (7)	24 (4)	
Orthoptera									
Acrididae	259	37	11	16	123	89	25	31	591
Gryllidae	32	227	45	51	1250	989	337	55	2986
Tetrigidae					16	39	23	9	87
Tettigoniidae	106	143	8	16	129	123	123	59	707
Other						1			1
Diptera									
Tabanidae	1			1	6	136	25	8	177
Other	1				10	45	6		62
Lepidoptera									
Adults		3			4	7	5	2	21
Larvae		1			4	7	8	7	27
Odonata					2	6	4	2	14
Coleoptera		1				8	1		10
Homoptera						2	5		7
Araneida	25	8	1	9	30	127	195	17	412
Frogs	5				4	7	16		32
Lizards						1	2		3
Total									5137

Cattle egrets characteristically are seen near or occasionally resting on cattle. As the cattle move, the birds accompany them and catch insects that are flushed from the forage. Sometimes the birds appear to catch insects that alight on the cattle. Because of these habits it was of interest to determine if arthropod pests of livestock constituted an appreciable part of the cattle egret's diet.

During the summers of 1966–67, 74 egrets were taken with a shotgun. Most of the birds were collected on or near levees of the Atchafalaya River floodway south of Krotz Springs, La. Heavily wooded areas generally were adjacent to the levees. Collections usually were made between mid-morning and mid-afternoon. After the bird was shot, the ventriculus was removed, split open, and the contents were placed in 70% alcohol for later identification.

As shown in Tables 1 and 2 the diet of the cattle egrets collected for study consisted of a wide variety of animal life. However, 56% of their food was composed of Gryllidae and 21% of other Orthoptera. These insects

Table 2.—Contents of the ventriculus of cattle egrets captured at indicated dates. 1967.

Animals found	Date and (in parentheses) no. of egrets examined						Totals (38)
	May	June		July		August	
	31 (4)	8 (4)	14 (6)	6 (10)	28 (11)	23 (3)	
Orthoptera							
Acrididae	44	10	54	30	36	13	187
Gryllidae	159	170	329	683	316	153	1810
Tetrigidae	6		14	29	21	4	74
Tettigoniidae	7	13	26	59	63	7	175
Other				1	1		2
Dipterea							
Tabanidae	22		273	1	153	13	462
Other	47		36	4	24		111
Lepidoptera							
Adults	1	1	3	13	7	1	26
Larvae			6	12	9	6	33
Odonata			2	3	17		22
Coleoptera		1	5	9	2	2	19
Hemiptera				9	2		11
Homoptera				2	2	2	6
Dermaptera					1		1
Araneida	48	7	112	173	105	15	460
Frogs	1		8	8	1	2	20
Lizards			1	2	3	3	9
Snake				1			1
Mammal				1			1
Earthworm					1		1
Total							3422

were very abundant in the areas from which collections were made. Spiders accounted for 10% of their diet and Diptera, principally Tabanidae, for 9%.

It appeared that the birds utilized the cattle to flush their prey. The egrets often walked in close proximity to the cattle as they grazed and caught the insects that were flushed and exposed (Fig. 1). When the cattle were at rest, the birds were often observed capturing horse flies that were attracted to the cattle. These were usually picked directly off the cattle. A few horn flies, *Haematobia irritans* (L.), also were captured in this manner. The cattle did not seem to be disturbed by the presence of the birds, and egrets often were observed perched on the cattle. The relationship obviously was that of mutualism.

Table 3 shows the number of tabanids taken from cattle egrets in 1966–67. The number of tabanids found per bird generally was low. However, 153 were removed from 1 bird. Several species of horse flies were found, including large species such as the black horse fly, *Tabanus atratus* F. and *T. americanus* Forster.

Table 3.—Number of Tabanidae found in the ventriculus of cattle egrets. 1966–67.

Date	No. Egrets	Collection site (Parish)	No. tabanids
6/ 3/66	3	Evangeline	1
6/13	3	East Baton Rouge	0
6/20	1	Iberia	0
6/23	2	Iberville	1
6/28	7	East Baton Rouge	6
7/ 1	9	St. Landry	136
7/27	7	St. Martin	25
8/24	4	St. Landry	8
5/31/67	4	St. Landry and St. Martin	22
6/ 8	4	"	0
6/14	6	St. Martin	273
7/ 6	10	"	1
7/28	11	"	153
8/23	3	"	13

FIG. 1.—Cattle egrets in characteristic relation to a grazing cow.

In view of the number of tabanids trapped around cattle in South Louisiana by Wilson, (1968) (14,640–95,122 during 4 trapping days in August and 5 in June 1967, respectively), the number of flies ingested by the cattle egret would not appear to be of value in reducing tabanid populations.

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Combinations of Insecticides and Baits for the Japanese Beetle[1, 2, 3]

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Van Leeuwen et al. (1928) were the first to test an insecticide-bait as a method of controlling the Japanese beetle, *Popillia japonica* Newman. They sprayed a combination of lead arsenate, sugar, and geraniol on trees. Their data indicated that the mixture provided good kill but gave poor protection to the plant, and they did not continue the studies. Today, though we have basically the same baits (Schwartz et al. 1966), we have much improved insecticides. Our renewed interest in such poison baits was stimulated by the success of Steiner et al. (1965) in eradication of the oriental fruit fly, *Dacus dorsalis* Hendel.

This paper is a report of our preliminary study to determine whether insecticide-bait combinations are a feasible method of controlling the Japanese beetle. Tests were made of phytotoxicity, attractiveness, and potency (kill) of each of several mixtures.

MATERIALS AND METHODS.—All tests were made in a greenhouse during the summer of 1967. The test plants were grown from seed in benches or potted in Garden Pack® no. 190 boxes (30.5×25.4×7.7 cm). Plants were treated when they were 15–25 cm high and before the blossom stage. The plant species used in this study were: bush lima bean, bush snap bean, dahlia, field corn, marigold, soybean, and zinnia.

Insecticides were made up with 100 ml of apple, orange juice, or water and applied as sprays. The phenethyl butyrate-eugenol (4-allyl-2-methoxyphenol) (9:1) was mixed with talc (v/w) and applied as a dust after the insecticides were applied. Fresh orange juice was obtained from oranges squeezed in the laboratory. The apple juice was purchased locally. Prepared mixtures were stored at 4°C for no longer than 7 days before use. The effects of storage on insecticide inactivation were not determined.

The liquid mixtures were sprayed on plants with a small atomizer to runoff. The dusts were delivered to the plants with a Zepher® duster (Model A2, O. M. Scott & Sons, Marysville, Ohio) until a light coating was obtained.

Phytotoxicity was determined by exposing 5 plants each of 7 species to all the test mixtures. Then 5 leaves or leaflets of each plant were marked for the amount of damage that occurred 5 days after application.

Female Japanese beetles from the field were denied food

[1] Coleoptera: Scarabaeidae.

[2] Accepted for publication Feb. 27, 1969.

[3] Mention of a proprietary product does not imply endorsement by the USDA.

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