

COMOX DISTRICT, VANCOUVER ISLAND, BRITISH COLUMBIA, DECEMBER 24, 1936. — A.B., 9.30 a.m. to 12.30 p.m., T.P., 9.30 a.m. to 4.30 p.m.; both on foot and working separately. Sunny, calm after slight frost (winter very open so far), temp. around 40°. Courtenay to Comox, from there around Harbour and Goose Spit, mainly on shore line with detours, about 12 miles.

Common Loon, 63; Pacific Loon, 175; Red-throated Loon, 3; Holboell's Grebe, 100; Horned Grebe, 80; Western Grebe, 570; White-crested Cormorant, 3; Violet-Green Cormorant, 12; Northwest Coast Heron, 7; Black Brant, 5; Mallard Duck, 250; Baldpate, 425; Pintail, 5; Green-winged Teal, 10; Canvas-back, 17; Greater Scaup Duck, 1150; Lesser Scaup Duck, 80; American Golden-eye, 950; Barrow's Golden-eye, 5; Ruffle-head, 545; Old-squaw, 9; Harlequin Duck, 5; White-winged Scoter, 2150; Surf Scoter, 1330; American Scoter, 70; Hooded Merganser, 2; American Common Merganser, 6; Red-breasted Merganser, 77; Northern Bald Eagle, 1; Pheasant (sp. ?), 1; American Coot, 46; Black-bellied Plover, 20; Black Turnstone, 240;

Aleutian Sandpiper, 2; Red-backed Sandpiper, 800; Sanderling, 3; Glaucous-winged Gull, 1750; Thayer's Gull, 4; Short-billed Gull, 100; California Murre, 700; Pigeon Guillemot, 1; Mottled Murrelet, 30; Horned Owl (subsp. ?), 1; Western Belted Kingfisher, 4; Northwestern Red-shafted Flicker, 4; Pileated Woodpecker, 1; Harris's Woodpecker, 2; Gairdner's Woodpecker, 1; Northern American Raven, 15; Western Crow, 2; Northwestern (Fish) Crow, 220; Chestnut-backed Chickadee, 6; Western Winter Wren, 3; Seattle Wren, 3; Northwestern Robin, 2; Western Bluebird, 1; Western Golden-crowned Kinglet, 11; Ruby-crowned Kinglet, 4; Audubon's Warbler, 1; English Sparrow, 4; Western Meadowlark, 37; California Purple Finch, 4; Pine Siskin, 60; Oregon Towhee, 6; Oregon Junco, 85; Rusty Song Sparrow, 19. Total, 66 species (two introduced), 12,298 individuals (the larger numbers are estimates). During previous 10 days two more Audubon's Warblers were recorded (T.P.). — ALLAN BROOKS and THEED PEARSE.

SOME NOTES ON THE SAND CRICKET, (*Tridactylis apicalis* Say.)

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THE SAND CRICKET, *Tridactylis apicalis* Say, is very seldom represented in amateur insect collections and often escapes the specialist owing to the fact that it is a burrowing form and does not readily take to flight. It is a very widely distributed insect being found in southern New England, Georgia, Louisiana, Texas, Southern California, Mexico and South America. Its most northern record is Toronto, Ontario, having been collected by Professor E. M. Walker and by myself in large numbers in the Don Valley region.

In order that Canadian naturalists may add this insect to their collections, I am including a description of it taken from Blatchley's Orthoptera of North Eastern America together with my method for collecting them:

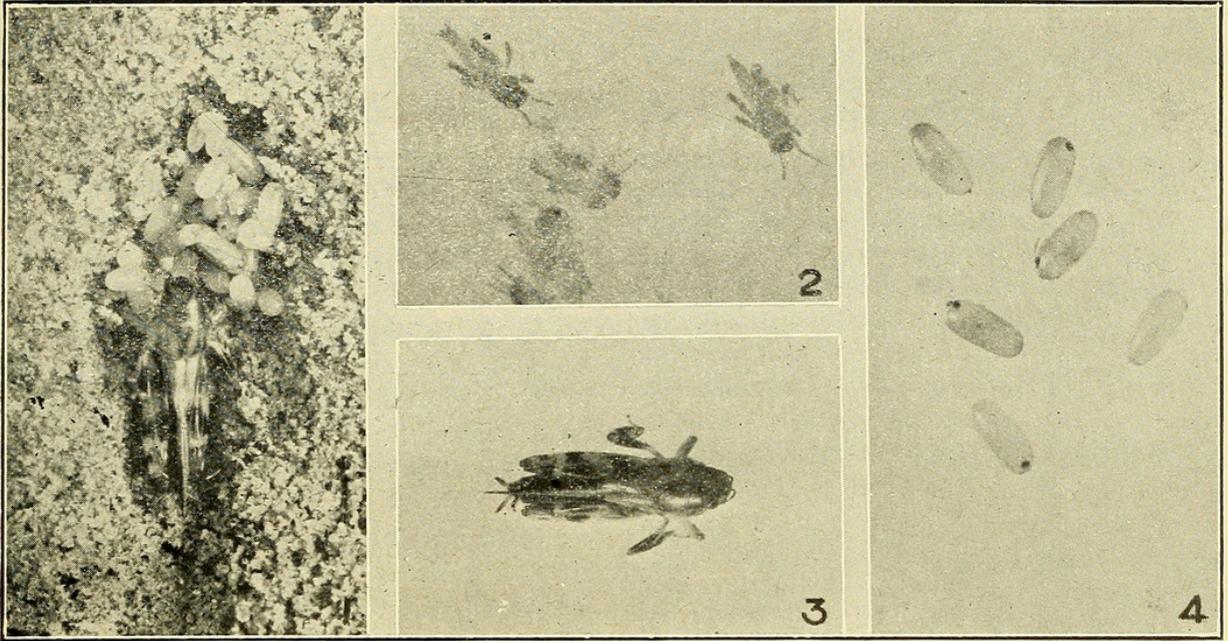
"Colour variable, usually black or dark brown; occiput and thorax with pale markings; tegmina with dorsal area and a spot behind middle yellowish; fore legs dull yellow; hind femora dull yellow with upper

half of outer face brownish or with three dark cross-bars. Disc of pronotum with apical fourth constricted and a faint median groove. Tegmina with tips broadly rounded." (Fig. 3)

In addition to this description one might add the presence of fossorial fore legs and saltatorial hind legs. Although classed as a cricket my recent studies have shown that it properly belongs with the Acridoidea and a better common name for it would be "Sand Grasshopper". The reason for its present systematic position is owing to its superficial resemblance to the mole cricket (*Gryllotalpa* sp.).

Most of my specimens were taken along the banks of Don Creek at Sunnybrook Farm in north-eastern Toronto. Although I was able to obtain specimens throughout the year, they were more abundant in late summer.

On January 17th, I visited the above locality in order to find at what depth the insects were



Tridactylis apicalis Say

FIG. 1—Female and batch of eggs; roof of burrow removed (x2.5)

FIG. 2—Newly emerged nymphs (6x)

FIG. 3—Female (2.5x)

FIG. 4—Eggs (5x)

hibernating. It was found that they had burrowed to a depth of 1 1-2 to 2 feet below the surface, having penetrated a layer of sandy clay and were hibernating in the soft sand beneath. These specimens were mostly nymphs although a great many imagines were also unearthed. The nymphs were quite active and would leap from their burrows as soon as they were exposed. The imagines, on the other hand, were quite inactive and only showed signs of life when taken indoors.

On August 2nd the above locality was again visited and they were found to be very abundant. While walking along the bank of the creek numerous immature nymphs would jump into the water and, with vigorous strokes of their hind legs, swim back to the shore again. Having chosen a likely position at the side of the bank, where numerous small pits gave evidence of adult forms, I dug a short distance and unearthed a great many females. The tunnels were rather shallow extending to a depth of from 1 to 1 1-2

inches below the surface, broadening out into a small chamber at the far end within which the female could be seen lying beside a batch of eggs. (Fig. 1). The eggs were about 1.5 mm. in length and there were from 10 to 27 eggs in each batch. (Fig. 4). Some of the eggs were much larger than others. The larger eggs showed more development, the eye-spots in each embryo being plainly visible through the transparent chorion. In some cases the young nymphs were found crowded around the female. It would seem from this that the female guards the eggs until they have hatched as in the case of the earwigs. The newly emerged nymphs were white in colour and not very active (Fig. 2). Fifteen minutes after eclosion they had turned a dark brown in colour and became very active, jumping vigorously for a distance of a foot or more.

The only other species of North American Tridactylidae is *Ellipes minuta* Scudd. which is not known from Canada.

NOTES AND OBSERVATIONS

WESTERN MEADOWLARK NEAR LONDON. — On April 15, 1936, I stopped my car about seven miles north of London and at once heard the song of a Western Meadowlark. He gave me two songs, each one repeated some six or eight times, and then flew about a third of a mile, alighting on the ground, and ceased singing. Rain came on and I went to London for Mr.

E. M. S. Dale. Together we returned, and at 5.30 p.m. he was singing again for a short time. A very noticeable feature of the song was its tremendous carrying power. When we first heard it, at a range of about a quarter of a mile, he was in the top of a tree, and the song seemed to come from a tree about 75 yards ahead of us. Failing to find him in that tree, we walked



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