was very spatulate indeed and some inches longer than the front. Although the latter was of the broken, stumpy type it was of fair length and so the rear horn must have been of most abnormal length. I saw this rhinoceros three or four times and observed her through glasses from considerably under a hundred yards distant.

In the diagrams I have tried to illustrate (1) a perfect horn, (2) the same horn broken off, (3) the same horn after going through the sharpening process.

C. H. STIGAND.

NOTE ON THE ABOVE

THE editors of FOREST AND STREAM, having previously heard of my explanation of the shape and growth of rhinoceros horns, have asked me to make an addition to Major Stigand's interesting note.

When in the northeastern Uele district during the Congo Expedition (1909-1915) I had the opportunity of seeing at least 150 sets of square-lipped rhinoceros horns which Greek traders were exporting from the Belgian Congo. The American Museum now owns about 30 sets selected from them.

There can be little doubt that the shape of rhinoceros horns is as variable an individual character as the great differences in form and size would at once suggest. They are independent growths arising from two patches of skin as compact horn-like masses composed of vertical fibres. They may be straight,

Photograph by Herbert Lang.

Square-lipped rhino with broken horn

curved forward, or bent to the rear, in the latter case almost forming a semicircle. Of course in young specimens they are of a rather regular conical type, whereas with advancing age the part immediately above the base is gradually worn away. Then the outstanding base becomes bristly and the increasing height accentuates the slenderness of the upper portion. The rear horn is generally very much smaller than the front one, and is sometimes a mere bump. In rare cases there may be an additional horny excrescence either between or behind the two horns.

The two largest specimens of white rhinoceros ever collected are those Mr. James P. Chapin and I obtained for the group now mounted in the American Museum of Natural History. Both of them have exceptionally large rear horns. The male has a 42-inch front and 22½-inch rear horn, and the female a 36¼-

Photograph by Herbert Lang.

Square-lipped rhino with perfect horns

inch front and a 21½-inch rear horn. I have heard of front horns with knob-like expansion toward the tip but have never seen one and I observed the spatulate feature only in rear horns. The broken horns that came to my notice were merely rounded off at the tip end. This, however, happens only in adult specimens with longer horns and I doubt whether the stumps left ever subsequently change much in form.

The horns of the cow rhinoceros are of course relatively more slender than those of the bull. This character is dependent on the narrower nasal bones to which the skin supporting the horns is attached. So far as the smoothing and sharpening of rhinoceros horns is concerned I do not think that it is essentially caused by rubbing them against stones and much less by digging. It is rather due to the indirect action of the heavy vegetation through which the animal moves with constantly nodding head. In some regions the greater wear may be traced to the effect of the razor-like blades of common grasses. The square-lipped species feeds only on grass. Occasionally after wallowing in mud it may rub its horn against the ground, but this performance is short in comparison with the constant movement of the horns against the entangled brush of the habitat during the daily 15 to 20 mile stroll.

HERBERT LANG.

THE JACK CURLEW

THIS is a fine large bird, brown in color, with a long decurved bill. Its note, a series of whistles like those of the greater yellowleg, but lower pitched, less modulated and sometimes prolonged into a trill or rattle, can be confused with the note of no other bird. Though a far northern breeder, it is one of the first of its kind to reach us on the southward migration, often being present in small numbers by the fourth of July. The first birds are usually seen singly or two or three together. Later, in favored localities they may form flocks of considerable size.

The jack curlew flies usually over the bay or meadows, but not infrequently along the ocean shore. Its flight is peculiarly steady and direct. If the gunner's decoys are set directly in its path it will often descend to them, but it seldom swerves to right or left for the purpose of doing so. It associates very little with other shore birds.

Several other curlews may occur rarely on our coast. The much larger sickle-bill with very large bill and yellower color is now very rarely seen, though formerly more numerous. The European whimbrel and curlew, corresponding to our jack and sickle-bill in size but with white at the base of the tail, have straggled once or twice to this side of the Atlantic. In the past the Eskimo curlew, which after feeding on the tundra of Labrador, migrated south across the sea, sometimes occurred in considerable numbers. This is a bird resembling the jack curlew very closely but smaller, with a smaller, less curved bill. As the jack varies greatly as to size of bill, the best distinguishing mark between the two was the color of the under side of the flight-feathers, barred in the jack and plain in the Eskimo curlew. The latter bird is now very rare, approaching extinction.—J. T. N.

THE TRAIL OF A SNAKE

MANY times along a dusty trail we see a wavy path about one-half inch wide going across the trail. This is a snake track, but the next question is, "Which way was he going?" If you observe closely you will find little mounds of dirt on the outside of the curve which are made by the movement of the snake's body in pushing forward.

In the accompanying diagram, snake

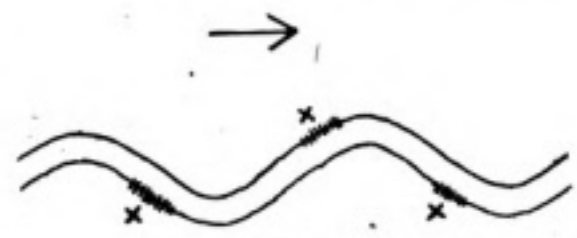

Diagram of snake track

going in direction of arrow, crosses mark mounds of earth. These are always on the outside of the curve. Watch a snake sometime and he will prove it for you. This is just for general interest to the woodsman.

AN OLD-TIMER.

TURTLE EGGS

ON September 23, 1916, and September 21, 1918, I had found young snapping turtles with shell one inch to one and one-eighth inch long at Mastic, Long Island, and had come to think of this as the season when eggs of this turtle were hatching in the locality.

In the forenoon of June first, 1919, a snapping turtle was found laying her eggs in the edge of some plowed ground about forty yards from a creek. Off hand, it seemed that these eggs should hatch at an earlier date, but why not try and find out? In the afternoon, after the turtle was gone we dug down and unearthed 23 eggs, to keep them under observation. The more or less arti-

(CONTINUED ON PAGE 396)