These animals are extremely abundant on the Missouri river, and in the adjacent country. On our way up that extraordinary stream, we first heard of wolves being troublesome to the farmers who own sheep, calves, young colts, or any other stock on which these ravenous beasts feed, at Jefferson city, the seat of government of the State of Missouri; but to our great surprise, while there not a black wolf was seen.

Wolves are said to feed at times, when very hard pressed by hunger, on certain roots which they dig out of the earth with their forepaws, scratching like a common dog in the ground. When they have killed a Buffalo or other large animal, they drag the remains of the carcass to a concealed spot if at hand, then scrape out the loose soil and bury it, and often lie down on the top of the grave they have thus made for their victim, until urged again by hunger, they exume the body and feast upon it. Along the banks of the river, where occasionally many Buffaloes perish, their weight and bulk preventing them from ascending where the shore is precipitous, wolves are to be seen in considerable numbers feeding upon the drowned Bisons.

Although extremely cunning in hiding themselves, at the report of a gun wolves soon come forth from different quarters, and when the alarm is over, you have only to conceal yourself, and you will soon see them advancing towards you, giving you a fair chance of shooting them, sometimes at not more than thirty yards distance. It is said that although they frequently pursue Buffalo, etc., they seldom ever follow them after they take to the water. Their gait and movements are precisely the same as those of the common dog, and their mode of copulating, and the number of young brought forth at a litter is about the same. The diversity of their size and colour is quite remarkable, no two being quite alike.

Some days while ascending the river, we saw from twelve to twenty-live wolves; on one occasion we observed one apparently bent on crossing the river, it swam toward our boat and was tired at, upon which it wheeled round and soon made to the shore from which it had started. At another time we saw a wolf attempting to climb a very steep and high bank of clay, when, after falling back thrice, it at last reached the top and disappeared at once. On the opposite shore another was seen lying down on a sand bar like a dog, and any one might have supposed it to be one of those attendants on man. Mr. Bei. shot at it, but too low, and the fellow scampered off to the margin of the woods, there stopped to take a last lingering look, and then vanished.

In hot weather when wolves go to the river, they usually walk in...
up to their sides, and cool themselves while lapping the water, precisely in the manner of a dog. They do not cry out or howl when wounded or when suddenly surprised, but snarl, and snap their jaws together furiously. It is said when suffering for want of food, the strongest will fall upon the young or weak ones, and kill and eat them. Whilst prowling over the prairies (and we had many opportunities of seeing them at such times) they travel slowly, look around them cautiously, and will not disdain even a chance bone that may fall in their way; they bite so voraciously at the bones thus left by the hunter that in many cases their teeth are broken off short, and we have seen a number of specimens in which the jaws showed several teeth to have been fractured in this way.

After a hearty meal, the wolf always lies down when he supposes himself in a place of safety. We were told that occasionally when they had gorged themselves, they slept so soundly that they could be approached and knocked on the head.

The common wolf is not unfrequently met with in company with the Prairie wolf {Canis latrans). On the afternoon of the 13th of July, as Mr. Bell and ourselves were returning to Fort Union, we counted eighteen wolves in one gang, which had been satiating themselves on the carcass of a Buffalo on the river’s bank, and were returning to the hills to spend the night. Some of them had their stomachs distended with food and appeared rather lazy.

We were assured at Fort Union that wolves had not been known to attack men or horses in that vicinity, but they will pursue and kill mules and colts even near a trading post, always selecting the fattest. The number of tracks or rather paths made by the wolves from among and around the hills to that station are almost beyond credibility, and it is curious to observe their sagacity in choosing the shortest course and the most favorable ground in travelling.

We saw hybrids, the offspring of the wolf and the cur dog, and also their mixed broods: some of which resemble the wolf, and others the dog. Many of the Assiniboin Indians who visited Fort Union during our stay there, had both wolves and their crosses with the common dog in their trains, and their dog carts (if they may be so called) were drawn alike by both.

The natural gait of the American wolf resembles that of the Newfoundlander dog, as it ambles, moving two of its legs on the same side at a time. When there is any appearance of danger, the wolf trots off, and generally makes for unfrequented hilly grounds, and if pursued, gallops at a quick pace, almost equal to that of a good horse, as the
GENUS SOREX.—LINN.

DENTAL FORMULA.

\[
\text{Incisive } \frac{2}{2}; \quad \text{Lateral incisive or false Canine from } \frac{3}{2} \text{ to } \frac{5}{2}; \quad \text{Molar from } \frac{4}{3} \text{ to } \frac{5}{3},
\]

from 26 to 34 teeth.

Incisive teeth in the upper jaw indented at their base; in the lower, proceeding horizontally from their aveoli and turned upwards towards their points where they are usually of a brown colour; lateral incisive or false canine, conical, small, shorter than the cheek-teeth.

Muzzle and nose, much elongated; snout, moveable. Ears and eyes, small; pendaetlyous; nails, hooked. A series of glands along the flanks, exuding a scented unctuous matter.

The generic name is derived from the Latin word Sorex, a Shrew, field rat.

Authors have described about twenty-three species of Shrews, twenty existing on the Eastern continent and thirteen in N. America. Many of these species are not as yet determined, we can scarcely doubt from past discoveries that this number will in time be greatly increased. They are, no doubt, susceptible of being arranged into different groups and genera.

We know no genus in which the American naturalist has a greater prospect of success in adding new species than that of Sorex.

SOREX PARVUS.—SAY.

SAY'S LEAST SHREW.

PLATE LXX.

S. supra fuscenti-cinereus, infra cinereus; dentibus nigricantibus; cauda brevi, sub-cylindrica.
CHARACTERS.

Body above brownish ash, cinereous beneath. Teeth black, tail short, sub-cylindrical.

SYNONYMS.

Sorex Parvus, Say, Long's Exped., vol. i., p. 163.
" " Harlan, p. 28. Godman, vol. i., p. 78, pl., fig. 2.

DESCRIPTION.

Incisive \(\frac{2}{2}\); Lateral incisive \(\frac{4}{2} - \frac{4}{2}\); Molar \(\frac{4}{4} - \frac{4}{4}\) = 32.

In the upper jaws the incisors are small, much hooked, and have a posterior lobe; the succeeding lateral incisors, are minute, conical, not lobed, the two anterior ones much the largest. The first grinder is smaller than the second and third, the fourth is the smallest. In the lower jaw the incisors are a little smaller than those in the upper. They are much more hooked and have each a large posterior lobe. The two lateral incisors are small not lobed—the grinders have each two sharp points rising above the enamel. The second tooth is largest and the third smallest. Nose slender and long, but less so than that of many other species, especially that of *S. longirostris* and *S. Richardsonii*. Muzzle, bi-lobate, naked; moustaches, numerous, long, reaching to the shoulders; body, slender; eyes, very small, ears, none; the auditory opening being covered by a round lobe, without any folds above; feet sparsely clothed with minute hairs, palms naked; tail thickly clothed with minute hairs, fur, short, close, soft, and silky.

COLOUR.

All the teeth are at their points intensely black; whiskers, white and black; point of nose, feet, and nails, whitish; the hair is, on the upper surface plumbeous from the roots, and of an ashy-brown at the tips; a shade lighter on the under surface: under the chin it is of an ashy grey gradually blending with the colours on the back.
**DIMENSIONS.**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>From point of nose to root of tail</td>
<td>$\frac{25}{8}$</td>
</tr>
<tr>
<td>Tail</td>
<td>$\frac{3}{4}$</td>
</tr>
</tbody>
</table>

**HABITS.**

This little creature, to which the above name was attached by Say, was first captured by Mr. Titian R. Peale, during Long’s Expedition to the Rocky Mountains, at Engineer Cantonment on the Missouri, where it was found in a pit-fall excavated for catching wolves.

Look at the plate, reader, and imagine the astonishment of the hunter on examining the pit intended for the destruction of the savage prowlers of the prairies, when, instead of the game that he intended to entrap, he perceived this, the Least Shrew, timidly running across the bottom.

The family to which this Shrew belongs, is somewhat allied in form and habits to the mole, but many species are now probably extinct.

We have seen a fragment of a fossil remainder of the tooth of a Sorex, found by our young friend Dr. Le Conte, of New-York, in the mining region adjoining Lake Superior, from the size of which, the animal must have been at least a yard long, and no doubt was, with its carnivorous teeth, a formidable beast of prey; whether it had insects and worms of a corresponding size to feed upon, in its day and generation, is a matter of mere conjecture, as even the wonderful discoveries of geologists have thrown but little light on the modes of life of the inhabitants of the ancient world, although some whole skeletons are found from time to time by their researches.

The Least Shrew feeds upon insects and larvæ, worms and the flesh of any dead bird or beast that it may chance to discover.

It also eats seeds and grains of different kinds. It burrows in the earth, but seeks its food more upon the surface of the ground than the mole, and runs with ease around its burrow about fences and logs. Some birds of prey pounce upon the Shrew, whilst it is playing or seeking its food on the grass, but as it has a musky, disagreeable smell, it is commonly left after being killed, to rot on the ground, as we have picked up a good many of these little quadrupeds, which to all appearance had been killed by either cats, owls or hawks. This smell arises from a secretion exuded from glands which are placed on the sides of the animal (Geoffroy, Mem. Mus. Hist. Nat., Vol. i., 1815), This secretion, like that of most animals, varies according to the age, the season, &c., and prevails more in males than females.
SAY’S LEAST SHREW.

Of the mode in which the Least Shrew passes the winter we have no very positive information. It is capable of sustaining a great degree of cold. We have never found one of these animals in a torpid state, when examining burrows, holes, or cavities in and under rocks or stones, &c., for the purpose of ascertaining, if possible, the manner in which they passed the winter. We have seen minute tracks on the surface of the snow where it was four feet in depth in the Northern parts of New-York, which we ascertained were the foot-prints of a Shrew which was afterwards captured, although we cannot be certain that it was this species. It had sought the dried stalks of the pig weed (chenopodium album) on which the ripened seeds were still hanging and upon which it had evidently been feeding.

We are unacquainted with any other habits of this minute species.

GEOGRAPHICAL DISTRIBUTION.

If authors have made no mistake in the designation of this species, as we strongly suspect, it has a wide geographical range; according to Richardson, it is found as far to the north as Behring’s Straits. The specimens from which our figures were taken, were obtained in the immediate vicinity of New-York. Dr. DeKay, in his Nat. Hist. of New-York, p. 29, mentions that although he had been unsuccessful in obtaining it in New-York, a specimen was found in Connecticut, by Mr. Linsley. We have not ascertained its southern range, all we know of its existence in the west, is from Say’s short description of the only specimen obtained west of the Missouri.

GENERAL REMARKS.

All our authors seem anxious to obtain Say’s Least Shrew, and we have seen dozens of specimens of young Shrews of several species, labeled in the cabinets “Sorex Parvus.”

Although there were few more accurate describers than Say, yet his description of S. parvus, is too imperfect, to enable us to feel confident of the species. There was no examination of its dental system, and his description would easily apply to half a dozen other species. The characters by which we may separate the different Shrews are not easily detected, they very much resemble each other in form, colour and habits; they are minute nocturnal animals and not easily procured.

There exist but few specimens in our cabinets to enable us to institute comparisons, and a century will pass away before all our species are discovered. We have very little doubt, that when the species which
was obtained in the far West and described by Say, and that of Richardson from the far north, and ours from the vicinity of New-York, are obtained and compared and their dental system carefully examined, it will be ascertained that they are three distinct species, and our successors will be surprised that the old authors gave to the Shrews so wide a geographical range.

Say's description is subjoined for convenient comparison. "Body above brownish cinereous, beneath cinereous; head elongated, eyes and ears concealed; whiskers long, the longest nearly attaining the back of the head; nose naked emarginate; front teeth black, lateral ones piceous; feet whitish, five-toed; nails prominent, acute, white; tail short, sub-cylindrical, of moderate thickness, slightly thicker in the middle—whitish beneath. Length of head and body, two inches four lines, of tail, 0.75." Richardson's animal was according to his description, dark brownish grey above, and grey beneath. Length of head and body two inches three lines, tail one inch.