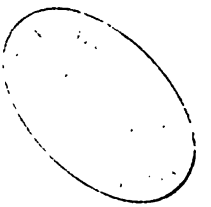
PROCEEDINGS



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The President in the Chair.

Dr. Kneeland read a communication on the subject of the Rhinoceros horn recently presented to the Society. The following is an extract.

"If we examine the structure of the horn of the Rhinoceros, we find that it is essentially made up of a collection of *hairs*,—that is, of a mass of long corneous cylinders, nearly parallel to each other; if, then, we define a hair as a corneous cylinder of variable length, we may regard nails, claws, hoofs, corneous horns, quills, &c. as merely confluent hairs. This horn at its base is evidently fibrous, being rough like the stump of an old brush; it belongs entirely to the skin, being in no way connected with the bones of the skull; so that, (as Burchell says in his Travels,) it is not improbable that the animal may have the power of moving it to a certain extent.

The length of this horn, measuring its convexity, is 37½ inches; its circumference at the base is 21¼ inches; its weight 18¼ pounds."

Prof. Rogers presented in the name of Dr. Leo Lesquereux, some observations on the coal measures of Ohio.

On the Coal Bed of Zanesville. The only bed of coal which is mined at Zanesville, lies between two layers of unconsolidated clay, or soft Shale, in which the only fossil plants visible are some traces of half petrified stems, so brittle that it is not possible to preserve them for examination. The softness of these beds of clay is somewhat remarkable. In appearance they much resemble each other, that beneath the coal being, however, ordinarily thicker and more continuous than the other. The overlying or roof-bed is often replaced by a thick layer containing nodules of clay iron ore, resting immediately on the coal. At the very base of the ore-bearing bed, and in contact with the coal, occur many specimens of *Productus*, a marine shell, mingled with good specimens of half-carbonized Stigmaria. In this locality the Stigmaria appear always in the *roof*.

I could not detect any trace of them in the bottom shale, and so far as we can rely on the observations of the workmen, they never occur there. Except *Stigmaria*, no fossil plants are found in or near this bed of coal of Zanesville. But in the Sandstones above and below the position of the coal bed, we find many prints of well-preserved large Calamites and *Lycopodendra*, from which, however, the carbonaceous matter has frequently disappeared.

In one bed of coarse Sandstone, these prints are remarkably distinct, even in their minutest details. In a bed of white, soft Sandstone, below the coal, and also in a stratum of ferruginous Shale beneath the upper limestone bed, I found many fossil forms of the same species with those met with in the Anthracite Basins of Pennsylvania, namely, *Asterophyllites equisetiformis*, *Annularia*, *Neuropteris cordifolia*, *Pecopteris æqualis*, *Sphenopteris*, and others. The relative positions of these beds are shown in the accompanying Sections, taken around Zanesville.

FIRST SECTION.

1. The highest strata capping the hills, Sandstone and Shales.
2. Coal 4 to 6 feet thick, roof and bottom clays 1 to 2 feet thick.
3. Coarse shaly Sandstone with prints of Lepidodendron, 3 to 5 feet.
4. Ferruginous Shale 8 to 15 feet.
5. Limestone 1 to 2 feet, with Terebratula, underlaid by a bed of coal or black Shale 6 inches to 1 foot thick, containing prints of Calamites and Neuropteris cordifolia.
6. Sandstone 6 to 8 feet.
7. Limestone 1 to 2 feet.
8. Sandstone rather thick; this goes under the stream, west of Zanesville, on the banks of the Muskingum River.

SECOND SECTION.

1. Coal, traces of a bed capping the surface. A thin bed of soft, white Sandstone with many fossil plants.
2. Sandstone 15 to 20 feet.
3. Shaly Sandstone, Iron Shales, black and friable.
4. Limestone 1 to 3 feet thick.
5. Black slate and traces of a coal bed 6 inches to 1 foot thick.
6. Shaly Sandstone 15 to 20 feet.
7. Limestone 1 to 2 feet.
8. Hard Sandstone 30 to 40 feet.
9. Ferruginous Slates and Limestone passing under the water.

Except in the thickness of the beds of Sandstone the correspondence between the two sections is clear.