of the Carbonaceous beds and the granite further to the south than this point.

4. *On the STRUCTURE of some of the SILICEOUS NODULES of the CHALK.*
By N. T. WETHERELL, Esq., M.R.C.S.

[Communicated by the President.]

[Abstract.]

THE author described several specimens of the peculiar banded flints* found in the chalk and in gravel, and of which he had made a large collection during several years. They usually exhibit a central longitudinal axis or narrow stem, crossed on its middle third by numerous short parallel stripes of alternately light and dark flint, and frequently terminated at each extremity by an irregular mass of flint, often clouded or grey. The axis occurs sometimes isolated, sometimes covered with a thin coating of grey flint only, and sometimes associated with only a few cross stripes of the banded structure. In some instances the banded flint has for its axis a sponge, or fragments of sponge.

The author had not found in the banded flint any spongy tissue peculiar to it; in some instances, however, a silicified sponge appears to have been traversed by alternate lines of the light and dark colour analogous to those of the banded flints. In some instances a concentric arrangement of light and dark layers of flint occurs around the two ends of an axis, or around isolated nuclei.

Mr. Wetherell regarded this banded appearance in the flint as not being due to an organic structure, but to have originated in a peculiar arrangement of the siliceous matter around organic bodies, frequently long and stem-like, such as those of the *Graphularia*, which supplied so many axial nuclei to the concretions in the London Clay†.

NOVEMBER 17, 1858.

Augustus Smith, Esq., M.P., 1 Eaton Square, was elected a Fellow.

The following communications were read:—

1. *On some FOSSILS from SOUTH AFRICA.* By C. W. Stow, Esq.

[In a Letter to the Assistant-Secretary.]

[Abstract.]

At the close of 1850 Mr. Stow and his party fell back into the interior to avoid the Kaffirs; in making the journey he collected largely the fossils on his route, and succeeded, with much trouble, in preserving them on his return.

* Mr. Parkinson figures and describes a worn specimen of one of these flints in his 'Organic Remains,' vol. iii. p. 241. pl. 16. fig. 18.

† Quart. Journ. Geol. Soc. vol. xiv. p. 30.

In a plain at the foot of the Rhenosterberg, a branch of the Sneewbergen Range (of which latter the Spitzkop is the culminating point), the author met with patches of ground strewn with nodular concretions and fossil wood (specimens 2 to 63) over an extent of about two miles in length and one in width. These fossils were on the surface, and had been probably derived from the neighbouring mountains.

The plain was of a lozenge-shape, about twelve miles broad and twenty long; and was one of several of a similar kind that he had travelled through. It was bounded by the Rhenosterberg Mountains on the N.E., on the S.W. by a nearly parallel range, and on the S.E. was contracted to a narrow valley between low rocky hills. Two low volcanic dykes crossed the plain, one on the north-western, and the other on the south-eastern side.

The strata forming the mountains are horizontal. There are about eight strata of sandstone forming the lower part of the Rhenosterberg. Immediately above there is a limestone full of rounded fragments of other calcareous and non-calcareous rocks, and sometimes containing bones (specimens 64, 65, 66). Of this pebbly limestone, or calcareous grit, there are four layers, separated one from another by several yards of strata, and varying in thickness from a few inches to about a foot.

The mountains on the opposite side of the plain are apparently composed of the same strata as the Rhenosterberg; for, taking a commanding position on one of the dykes, one can distinctly count the strata in the mountains on either side; and so uniform are they in colour and thickness, so alike in height, and equally horizontal in position, that the idea at once forces itself upon the mind that they must at one time have been continuous.

At one spot on the side of the Rhenosterberg is a Kloof where the author found some fossils imbedded in the rock; and he often regretted when visiting the spot that the Kaffirs had left him nothing but a hammer and old chisel that were thrown into the waggon at starting, as with better tools he might have obtained many more specimens. Here he found the specimens 68, 69, which appear to be casts of stems in sandstone.

The first bones he here discovered were those of the skeleton, specimen No. 83 (a small *Dicynodon*). They were directly in the water-course, and only a small piece of one part was at first visible. By dint of hammering and chiseling each succeeding portion revealed itself to view. Unfortunately the skull was wanting. Underneath a large part of it there was a whitish scaly appearance on the rock, which might have been the remains of the covering that the animal had when alive.

Many portions of the strata here were matted together with the stem-like fossils, such as specimens 70-75. Specimens 76 to 82 (nodular concretions) appear to have been washed from the same strata.

The specimen No. 125 (leg-bone) was found in the rock a short distance off.

About 20 yards from where the skeleton was imbedded, the specimens 84-87 ("cone-in-cone" clay-stone) occurred. About 30 yards from this spot, and in the same bed, specimens 88 and 89 (bones) were found, where the water ran, and hence the portion at the surface was so softened as to fall to pieces. These pieces appear to show that the ribs and vertebræ are associated with the remains of the animal's outer bony covering or carapace.

Detached from a stratum above the one where Nos. 84-87 occurred, were the two fossil skulls, Nos. 90 and 91 (a small *Dicynodon*, and a smaller undescribed reptile), and the septaria, Nos. 92 and 93. At a spot a little to the N.W. of the Kloof, and in a bed higher up than the last-mentioned, the nodules and septaria Nos. 94-107 were found.

Between the Kloofs the parting ridges were covered with detached portions of the upper strata, mixed with numerous nodular concretions, such as Nos. 108-114. Some of these contained a fine powder when broken (especially No. 112).

Of the volcanic dykes a few specimens are sent. No. 115 is an exfoliating nodule; and similar concretions are very numerous on both of the dykes, especially on the south-eastern dyke, where they were at some places piled one on another. They varied greatly in size, some being about an ounce in weight, and others too heavy for two or three men to move. This difference of size might be accounted for by the smaller ones having been subjected to exfoliation for a longer period of time. Along the other ridge masses of felspathic trap, such as No. 116, protruded. Many of the pieces were musical when struck—so much so, that some of the people with the waggons, on the first day they arrived, asked what bell it was that was tolling, and which proved afterwards to be some children amusing themselves by striking a large piece of this rock with a stone.

These cross-ridges or dykes attain their greatest altitude towards their centre,—decreasing as they approach the mountains, and then again appearing as exposed precipices or "Krantzes" along their crests.

2. *On some Points in the GEOLOGY of SOUTH AFRICA.*

By Dr. R. N. RUBIDGE.

[Communicated by the President.]

[Abstract.]

THE author had observed in Namaqualand the occurrence of horizontal siliceous beds, covering other siliceous inclined beds, the silicification of the latter being apparently due to the infiltration of silica from the upper quartzose beds into the inclined beds below. In this communication Dr. Rubidge details the evidences that he observed of such a process having taken place, and points out how the observations on some of the Namaqualand rocks by Mr. Bain, Mr. Bell, and Dr. Atherstone, respectively, tend to support his views