

THE GREAT SOUTHERN COMET

BY letters from Mr. Gill received by the mail leaving Cape Town on February 3, it appears that the large comet of which Dr. Gould telegraphed from Buenos Ayres was discovered, so far at least as regards a part of the tail, on February 1, from the west side of Table Mountain. Mr. Gill received information that a comet's tail "had been seen to set" from this quarter on the following afternoon, and the same evening the extreme portion of the tail was visible over the mountain from the Royal Observatory; by going a quarter of a mile south of the Observatory, the near shoulder of the mountain was cleared, and the tail, rapidly brightening, was traced further; it passed parallel to a line joining  $\beta$  and  $\delta$  Gruis, about 10' to W., but could not be traced beyond the former star. Mr. Gill thought the nucleus had set almost at sunset.

The following telegram has been received by the Academy of Sciences at Paris from the Emperor of Brazil, who takes a personal interest in the affairs of the Observatory at Rio Janeiro, which is in charge of M. Liáis:—"Rio de Janeiro, 20 février, 1880. Deuxième note de Liáis. Comète seulement observée 4 et 8. Renseignements; observations faites ailleurs. Approximativement, distance périhélie, 0'05 à 0'10; passage périhélie, 11; inclinaison, 80°; longitude du nœud ascendant, 120°; longitude du périhélie, 85°.—PED. ALCANTARA."

If the time of perihelion passage is assumed February 11'5 G.M.T., and the perihelion distance 0'075, with direct motion in the orbit, the comet's position on February 2 at 8h. 30m. mean time at the Cape would be in R.A. 314°, with 22° south declination; so that it would be distant only about 5° from the sun, thus confirming Mr. Gill's conjecture as to the position of the nucleus, but unless the comet became very rapidly fainter, after perihelion, it is difficult to explain with the above elements, its not being observed in Europe.

The last great comet which was observed in the southern hemisphere without becoming visible in these latitudes was that of January, 1865, which had also a small perihelion distance with large inclination; this comet was north of the ecliptic less than twenty-eight hours. It became suddenly visible in Tasmania, near the western horizon, on January 17, and was observed until the last week in March. The best orbit is that given by Mr. Tebbutt, from his own observations at Windsor, N.S.W. (*Astron. Nach.*, No. 1541).

GEOLOGICAL NOTES

A LITTLE pamphlet under the title of "Mélanges géologiques," by MM. Cogels and Baron van Ertborn, has just appeared at Antwerp, in which some interesting new facts are given respecting the post-tertiary formations of Belgium. Much controversy has for a long time been carried on as to the relative positions of some of the quaternary deposits of that country. The "Sables campiniens" and the "Limon hesbayan" were regarded by Dumont as of contemporaneous origin, albeit he placed the Limon above the Sables in the legend of his geological map of Belgium. D'Omalius d'Halloy and M. Dewalque ranged the Hesbayan mud above the Campinian sands and gravels. MM. Winkler, Cogels, and Van den Broeck, on the other hand, have concluded the reverse to be the more probable order. But in no case had the true order of succession been observed in any actual section. This question, which might have been answered long ago by a few shallow borings, appears to have been recently settled in this way by the gentlemen above named. They have found that at Menin and Courtrai, places some ten kilometres apart, the same order of sequence is observable, and that in each case the yellow sands of the Campinian series overlie the yellow and grey mud with *Cyclas*, *Pupa*, *Lymnaea*, &c., forming the Hesbayan zone.

THE same authors have in a similar manner fixed the horizon of the deposit from which were obtained the numerous bones of the mammoth found in 1860, the more perfect of which form so imposing a part of the remarkable collections in the Brussels Museum. According to their reading of the data the following is the section at Lierre:—

	Metres.	
Sands with gravelly base ...	5'30	Campinian.
Peaty sand and peat ...	0'70	Fluviatile Quaternary
Black glauconitic sand ...	0'60	} (containing the mammoth bones).
Gravelly glauconitic sand ...	0'70	
Argillaceous glauconitic green sand ...	0'10	Antwerpian (sands with <i>Panopæa menardi</i> ).

The sands containing *Panopæa menardi* and *Pectunculus pilosus*, which MM. Cogels and Ertborn include in their widely distributed "Antwerpian" group were evidently succeeded in the Lierre district by a wide marsh which must have been a favourite haunt of the mammoth and its contemporaries. Arranging the geological formations of the neighbourhood of Antwerp in chronological order these writers regard them as capable of the following subdivisions:—

Folder clay ...			
Stratified sand with derivative fossils ...			} Recent.
Peat ...			
Grey clay ...			
Peaty black clay ...			
White sand ...			
Sand ...	Upper	} Campinian.	} Quaternary.
Massive argillaceous sand ...	} Lower		
Stratified sands and clays ...			
Gravel and shell debris ...			
Stratified sands and sandy clays ...			
Peat and peaty clay ...			
Various sands with broken and rolled shells, bones <i>in situ</i> or rolled ...			
Sandy clay with marine shells, gravels, pebbles, and large rolled fragments ...	Lower		
	Quaternary.		
E. Pure or argillaceous green sand ...	} Sands with <i>Trophon antiquum</i> .	} Scaldestan.	
D. Sands with <i>Carbula striata</i> ...			
C. Upper shell-bed			
B. Middle sands "	} Sands with <i>Isocardia cor</i> .	} Diestian.	
A. Lower shell-bed			
Bluish-grey glauconitic sand ...	} Sands with <i>Terobratula grandis</i> .	} Miocene.	
Gravels ...			
Black glauconitic sand ...	} Sands with <i>Pectunculus pilosus</i> .	} Antwerpian.	
Green or black glauconitic sand, pure or argillaceous ...			
Do, with or without fossils, scattered gravels ...	} Sands with <i>Panopæa menardi</i> .	} Rupelian ... Oligocene.	
Bluish-grey fossiliferous argillaceous sand, glauconitic black sand ...			
Gravels, and large rolled blocks ...			
Boom clay ...			

In a recent communication to the Royal Geological Society of Cornwall Mr. J. H. Collins continues his observations on the existence of Lower Silurian rocks in Cornwall, and shows that they cover a much larger area than has been supposed. He has found remains of *Orthis* in the quartzite of Manaccan like those already known from the quartzite of Carn Gowan. He is engaged in a microscopical and chemical investigation of the hornblende-rock and serpentine of the same district, and is disposed to regard these masses as highly altered Lower Silurian stratified rocks.

PROF. MARSH chronicles the discovery of a new species of *Sauranodon* from the upper Jurassic series of Wyoming. Since the first discovery of the genus by him eight additional specimens have been obtained, enabling him to distinguish two species (*S. natans*, the original form, and *S. discus*) and to throw considerable light on the limbs of this interesting type of mesozoic reptile which he regards as presenting an earlier stage of differentiation than *Plesiosaurus* and *Ichthyosaurus*.

UNDER the name of Titanomorphite, A. von Lasaulx describes a new limonite from the gneiss of the Eulengebirge. It forms a fibrous granular aggregate surrounding kernels of rutile or titanite iron, of which it must be regarded as an alteration-pro-