force caused by the near passage of another body moving with great velocity would account for the observed phenomena. I am of the opinion that no forces except those originally resident in the central body itself are essential for the creation of such structures.

As a supplement to my note in NATURE for January 14, 1904, I now wish to offer a very simple theoretical explanation of the manner in which the ejective force becomes so very powerful.

As a result of the decrease in temperature from the centre to the surface of an incandescent mass exposed to the cold of space, the surface-crust finally formed will be punctured at various points by the imprisoned gases, thus also allowing the more refractory matter from the interior to overflow the region immediately surrounding each vent; the increased weight of the locally thickened crust causes the lower opening (of the channel formed) to be depressed below the general level; as the height of the surface-cone increases the simultaneously formed inverted cone is forced deeper and deeper into the regions of greater temperature and pressure, where matter exists in the form of compressed gases. The more easily volatilised materials of the depressed mass will be dissipated, leaving only the more refractory elements to form the inverted cone.

So long as there is a free flow of gaseous matter, the higher the volcanic cone the greater will be the ejective force, and, owing to internal reactions, diametrically opposite vents will be most powerful. We therefore reach, as it seems to me, the theoretical conclusion that *in the act of cooling, an originally incandescent body has the power to create conditions which will enable it to remove a part of its mass, in a finely divided state, to distances which may be far beyond the sphere of its own sensible attraction.*

J. M. SCHAEBERLE.

Ann Arbor, January 8.

On an Alleged New Monkey from the Cameroons.

IN NATURE for October 26, 1905, Dr. H. O. Forbes described, as representing a new species, a monkey (Guenon) from the Cameroons, which he named *Cercopithecus crossi* in compliment to Mr. Cross, of Liverpool, to whom it belonged. The description tallied so closely with that of *C. preussi*, based by Matschie in 1898 upon specimens also from the Cameroons, that I strongly suspected the two species would prove to be identical. That this is the case I have now no hesitation in affirming after examining the type of *C. crossi*, which Mr. Cross has sent to the Zoological Gardens in London.

R. I. POCOCK.

Zoological Society's Gardens, January 17.

Sounding Stones.

IT may be of interest to add to the list of musical stones provided by your correspondents another limestone, viz. the very hard, crystallised, coral rock of the coasts of British East Africa. Among the bizarre forms assumed by these rocks under the erosion of the sea, isolated pillars with projecting arm at the top, like a gallows or an inverted capital "L," are common in places. This horizontal arm in many cases gives a clear musical note when struck with a stone or hammer, being thus a ready suspended natural gong.

CYRIL CROSSLAND.

Broughton in Furness, January 18.

Chinese Names of Colours.

IN NATURE of January 11 (p. 246) Mr. A. H. Crook refers to some colour terms used by Chinese. *Ts'eng* (Cantonese) or *ch'ing* (Pekingese) is a vague Chinese term applied to black, grey, "neutral tint," ocean green, sky colour, blue, &c., but nearly always with a gloss or sheen upon it. The fresh turnip-like pears of China are called in Canton *süt$_0$ li*, or "snow-pears" (the small circle following the *t* indicating the "tone" of the word). Williams's Dictionary of 1878 gives *hsüeh-ch'ing* (Pekingese) or *süt$_0$-ts'eng* (Cantonese) as "a purple colour," and the allusion is evidently to that bluish glassy tinge that frozen snow takes, as seen in glaciers, icebergs, and so on; in short, all "vitreous" or glassy hues, from beer-bottles to mother-of-pearl, are *ts'eng*.

E. H. PARKER.

THE WORK OF THE NATIONAL ANTARCTIC EXPEDITION.[1]

CAPTAIN SCOTT is warmly to be congratulated on the two interesting volumes in which he describes the work of the National Antarctic Expedition and gives his conclusions as to its results. The book, naturally dedicated to Sir Clements Markham, is a most valuable contribution to the knowledge of what will probably always be one of the most interesting parts of the Antarctic continent. It is written in a charmingly easy and fluent style; the narrative is modest and frank; and the story is always pleasant reading, from its evidence of the uniform good temper which prevailed throughout the expedition, of Captain Scott's capacity for handling his men, of his sympathetic appreciation of their high endeavour, and of his keen interest in all branches of the work. The book is illustrated by a series of fine photographs, many of which were taken by Lieut. Skelton, and its value is greatly increased by the beautiful sketches of Dr. Wilson.

The story of the expedition is full of incident and adventure, in most of which Captain Scott had a large share, as he exposed himself to its greatest risks. The two main achievements of the expedition are Captain Scott's fine sledge journeys with Dr. Wilson and Lieut. Shackleton to the farthest south, and with Evans and Lashly to the farthest west that was reached in Victoria Land. Both these undertakings were daring and arduous in the extreme. The sledge journey to the south reached the latitude of 82° 16′ 33″ from 77° 51′, and this spirited performance would probably have been even more successful but for the death of the dogs. The journey westward on to the plateau of Victoria Land Captain Scott describes as even more severe than that to the south, and regarding it he says:—"I cannot but believe we came near the limit of possible performance."

The scientific results of the expedition cannot yet be fully stated, as the collections and observations have not been worked out; and we shall have to wait in most cases for the reports of the experts to whom the material has been entrusted. Captain Scott's book contains accounts of the chief work in geography, in vertebrate zoology, and in geology. The Antarctic mammals and birds are described in an interesting chapter by Dr. Wilson, in which the most important contribution is the account of the life-history of the emperor penguin, which was studied on its breeding-grounds by himself and Lieut. Skelton. The volumes contain no technical information about the invertebrates, &c., and it is disappointing to learn that we cannot expect any additions to the deep-sea fauna of the Southern Ocean. The wealth of new material collected by the *Challenger* in its one deep haul in the Antarctic, led to hopes that valuable results would be achieved by the powerful deep-sea equipment of the *Discovery*; but apparently it was very little used, owing to the short time spent at sea, and possibly on account of the limited coal supply. One dredging is referred to at the depth of 610 fathoms, another at 100 fathoms, and a third, also in shallow water, off the great ice-barrier. The invertebrate fauna, of which Mr. Hodgson has already described elsewhere some of the more interesting discoveries, seems to have been chiefly collected under the ice in McMurdo Sound by means of his very ingenious devices.

The principal geological results are stated in a

[1] "The Voyage of the *Discovery*." By Captain R. F. Scott, C.V.O. Vol. i. Pp. xx+556. Vol. ii. Pp. xii+508; with two maps and 272 illustrations. (London: Smith, Elder and Co., 1905.) Price 42s. net.

valuable appendix by Mr. Ferrar, which is to be followed, in the volumes on the scientific work of the expedition, by a more detailed account of the rocks, and we may hope also by more precise information about the ice. Captain Scott describes the admirable pains devoted to the observations in physics and meteorology, the results of which are being worked out.

The geographical work—"surveyed under the direction of the R.G.S.," the chart informs us—is stated and discussed at length. The chief geographical results were achieved by the sledging parties. The results thoroughly justify those who advocated the selection of McMurdo Sound, or Bay as it was then called, as the winter quarters, owing to its high latitude, its exceptionally interesting geographical position, and its easy accessibility in the summer. There is one quaint mistake in the book in reference to the main hut erected there, which is described (p. 215) as of a design used by "outlying settlers in that country" (Australia); whereas the design was based on Peary's Greenland hut, and the modifications, suggested by Australian experience, were devices used there to render the walls of the frozen meat warehouses impermeable to heat and cold.

The headquarters were established near Mount Erebus, which is still in quiet activity, and (disregarding the feelings of those who like scientific precision in geographical terms) the volcano is described throughout the book as giving forth smoke, fire, and flame.

The widest popular interest is perhaps felt in the "great icy barrier," owing to the mystery suggested by its name, and perhaps, in part, to what, according to Captain Scott, was Ross's exaggeration of its height and uniformity. Ross's conclusion that this ice-sheet is afloat along its seaward face has been fully confirmed; and the important discovery has been added, by observations on a food depôt, that the ice is moving in one place at a rate estimated at 608 yards in 13½ months. Captain Scott regards this ice-sheet, a smaller sheet in Lady Newnes Bay, and a mass ashore at Cape Crozier, as relics of a vast sheet of glacier ice, which once filled the whole of the Ross Sea, and floated when the reduction in its thickness rendered it buoyant.

The geographical problem of most importance is the form and area of the Antarctic continent. It is gratifying to those who believe in the value of geographical homologies, to find how fully the suggestions based on them have been justified by the work of the Antarctic expeditions. The important discovery of Coats Land by the Scotch expedition has revealed the southern shore of the Weddell Sea even further north than the position assigned to it in Sir John Murray's sketch-map. The German expedition has re-established faith in the continuity of the land, in an area where the soundings of the *Challenger* had thrown doubt on it, and where it was possible that there might be a deep southern indentation opposite the basin of the Indian Ocean.

The only serious alteration suggested in the outline of Murray's Antarctica is that the Pacific coast between Graham's Land and Victoria Land may possibly be further south than was expected. The

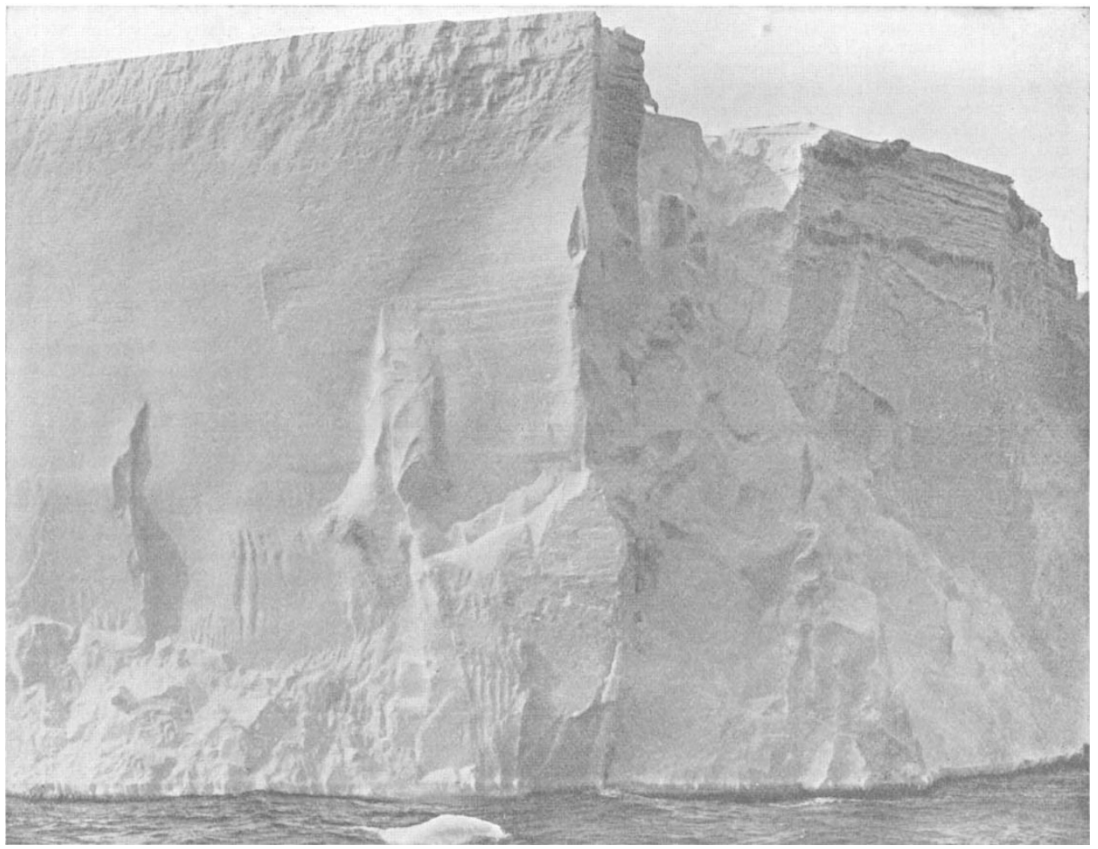

FIG. 1.—Highest Ice-wall (280 feet) on the Ice-Barrier, showing the regular stratification. From "The Voyage of the *Discovery*."

projection eastward of Ross Island and the peaks called by Ross the Parry Mountains, which were all regarded as part of the mainland, suggested that behind Ross's ice-sheet the mountains of Victoria Land trend to the east. Captain Scott tells us that the Parry Mountains do not exist; but a group of islands, White Island, Black Island, and Minna Bluff, occur in almost the same relation to Mounts Erebus and Terror as Ross marked his Parry Mountains. Behind this archipelago there is a great bight, the land first trending somewhat westward, and bending to the east after about 81° S. Thence, so far as Captain Scott could see, the land has an average trend to S.S.E. from Mount Wharton to the most distant southern peak observed beyond Mount Longstaff. Captain Scott concludes that the mountains continue in the same direction to Graham's Land.

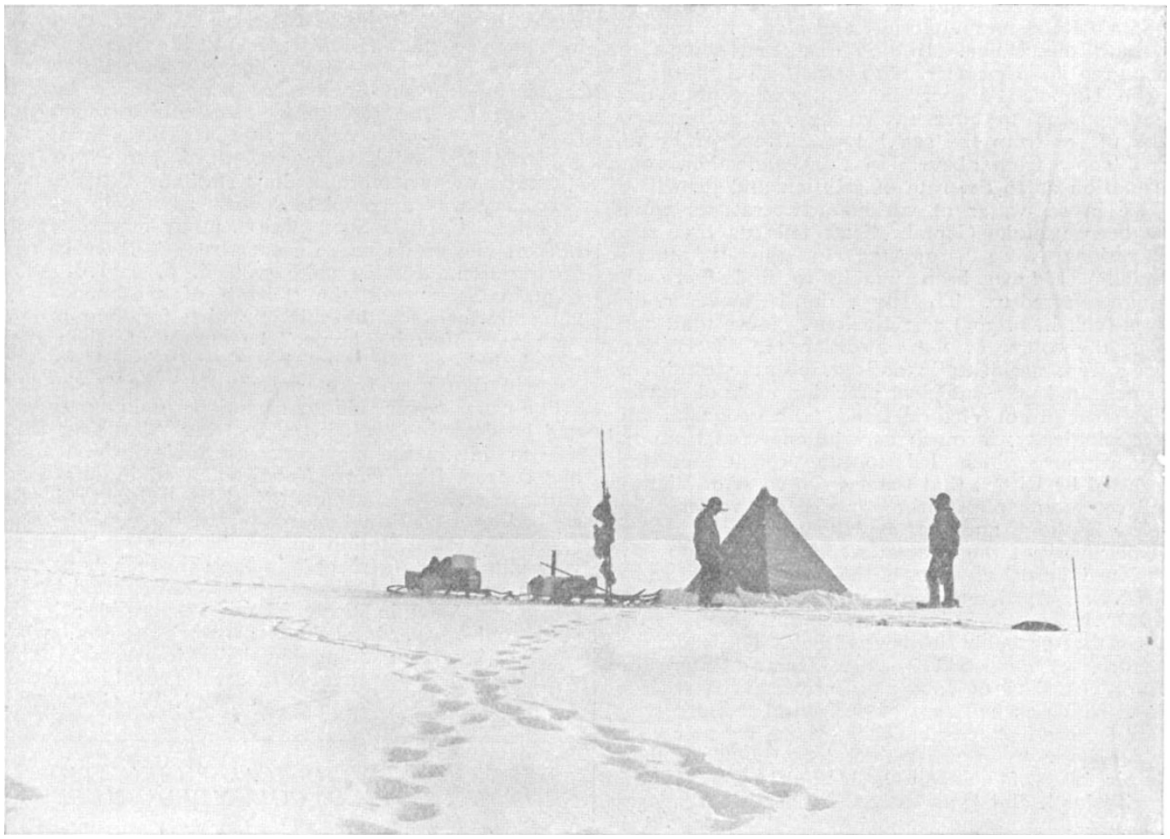

FIG. 2.—A camp on the "Ross's Ice-Sheet," showing the snowy texture of the surface. From "The Voyage of the *Discovery*."

There is nothing *a priori* improbable in the connection of Victoria Land and Graham's Land along this line; for coasts of the Pacific type are characteristically straight for long distances, and have broad open curves rather than sudden bends.

This does not affect the essential part of my suggestion made in NATURE, April 25, 1901, "that we may expect the greatest elevations on the Antarctic Lands will lie along the Graham's Land-Victoria Land line, and will be near the sea. To the south of the main mountain range there may be an undulating ice-covered region descending slowly across the Pole to the shore of the Weddell Sea. The main ice drainage would then be not from the Pole radially in all directions; the ice-shed would run along the Pacific Shore with a short steep northern face and a long gradual slope southward to the Pole and across it northward to the Atlantic." This view is fully supported by Captain Scott's opinion that, according to his view of the course of the main mountain chain, "the geographical pole would be situated 200 miles more from it, and on the high ice-plateau which must continue behind" (vol. ii. p. 427).

The lands, problematical and proved, to the south of the Pacific probably belong to one of those island festoons, which are still so characteristic, and apparently once occurred along all the Pacific coasts. The only objection to placing the main coastline of the South Pacific south-west of Ross's ice-sheet, instead of along a line north-eastward through King Edward Land, is the ice-barrier, on Captain Scott's theory of its formation. If it be land ice, and be flowing rapidly northward, a mile in three years, it must be fed from snow-fields among mountains to the south, and is probably confined between high lands to east and west.

It is here that we feel most the need of more precise information regarding the ice of Ross's ice-sheet, as Ferrar proposes it should be re-named. That this ice is land ice flowing out to sea has been the generally accepted explanation of the facts described by Ross. The difficulty presented by Ross's ice-sheet, if it be advancing northward along its whole face at anything like the rate of the ice movement round Minna Bluff, is that its surface appears to be practically level, so far as it was followed by Royds to the south-east and by Scott to the south. Hence its rapid movement cannot be due to flow down a slope as in the case of ordinary glacier ice. The best

photograph of the ice (vol. i., p. 192) shows that it is very regularly stratified, and there is no visible interglacial material; the ice appears very different from that typical of glaciers. A photograph of a block of the barrier ice, of which the structure had been brought out by throwing over it a bucket or two of hot water, would have been very useful. The characters of glacier ice are so distinctive that any precise information as to the structure of the barrier ice would have left no doubt as to its nature. The photograph (Fig. 1) which gives most information about the ice suggests that, at least the part above sea-level (see also Fig. 2) has been formed by the accumulation of layers of snow upon the surface, more quickly than the ice was dissolved by the sea beneath. If this view of the origin of the ice sheet be correct, both its horizontal position and the gentle undulations of its surface are intelligible; and it forms no obstacle to belief in the connection of Graham's Land and Victoria Land along the shortest and most direct line. In this case Ross's ice-sheet will agree in character with the floebergs of Sir George Nares's Palæocrystic Sea, except that they were supposed to have grown by the additions of layers of ice from the sea below, instead of by the fall of snow from above. In this connection, some information as to the rate of solution and growth of the ice in sea-water at various temperatures would have been useful. Captain Scott tells us that such observations were suggested in the "Antarctic Manual." I have been unable to find there the passage referred to. The suggestion is, however, dismissed (vol. i., p. 305) as ridiculous. More than once during the course of the expedition the observations desired were accidentally noticed, but the conditions are not stated with sufficient precision to be of service.

The structure of Victoria Land, both geographically and geologically, is much as was expected from the considerations which led to the conclusion, first suggested by Ritter, that the eastern coast of Victoria Land represents the continuation of the volcanic line of New Zealand, and that a plateau occurs behind it. The discovery of the plateau structure seems to have occasioned surprise, though the hope was expressed in NATURE, April 25, 1901, p. 612, that one party would "cross the volcanic mountain chain to the plateau that probably lies beyond it." The geological structure, as described in Mr. Ferrar's interesting chapter, consists of low-lying archæan coast hills, beyond which occur sheets of horizontal sediments and broad sheets of plateau basalts. Huge volcanic cones occur off the main coast line, like the worn down volcanic hills of Dunedin and Bank's Peninsula in New Zealand, and apparently there are great volcanic cones on the plateau near its edge. It would be difficult to find land with a structure more typical of the Pacific coast type.

In contrast to the extensive discoveries achieved by the sledging parties from the winter quarters are the limited results obtained at sea, which make the title of the book, "The Voyage of the *Discovery*," somewhat of a misnomer. In the book 176 pages are devoted to describing the whole voyage of the *Discovery* from London to London, and 698 pages to describing the sledging and other work on shore. It was hoped that the *Discovery* would have thrown some light on the two chief problems offered by the outline of Antarctica, in the area reserved for the British sphere of operations. After the discovery of Coats Land by the Scottish expedition, the longest unknown stretch of the Antarctic coast is that south of the Pacific. It was believed from the work of Ross and Cook that land exists connecting Graham's Land to that on the eastern edge of the barrier. The *Discovery* has confirmed the existence of land close by the point where Ross described his "strong appearance of land"; but the necessity for the whole expedition returning to winter on McMurdo Sound prevented the discovery of its nature. Captain Scott seems disposed to regard this land as probably volcanic, and Mr. Ferrar as probably continental.

It was also hoped that the expedition would determine the character of the land to the west of Cape Adare; for a section along that coast, which cuts across the grain of the continent, would no doubt give more information as to its structure, than could be obtained along the coast of Victoria Land or by a traverse of the ice-clad interior. But here again the expedition had to return from the threshold of the unknown regions. This was Captain Scott's misfortune, and was in no way his fault. It was the result of the plan of the expedition being to keep the *Discovery* at the winter quarters. The limited work done by the *Discovery* at sea, and its inability to accomplish the much desired deep-sea trawling, is possibly due to the heavy demands on the available coal supply made by her engines; for the 500 horse-power which they gave required a large consumption of fuel, and this rendered impossible any prolonged period of full steaming away from a coaling station. Whether the *Discovery* was a complete success as a ship appears doubtful. Captain Scott praises many features in its design, and of its magnificent strength there can be no question. But in spite (vol. ii. p. 327) of what Captain Scott calls the "depth of sentiment" he naturally feels for the ship, "which for long proved such a comfortable home," he says that when they tested her sailing qualities they "found to our chagrin that they were exceedingly poor"; she had a fine capacity for rolling, sometimes going over 90°, and he describes (vol. ii. p. 375) her "lurching from side to side in the most uncomfortable fashion while our consort [the *Terra Nova*] followed in our wake with scarcely a movement." Her leakiness is described as a continual source of trouble, and the only expression of irritation in the book is at "another very stupid arrangement" in the ship (vol. i. p. 339). But for the somewhat meagre results achieved by the *Discovery* Captain Scott is not responsible; if the ship could have been kept at work at sea, while Captain Scott was doing his sledge journeys on land, a wider and richer harvest of results would doubtless have been obtained. J. W. GREGORY.

RECENT ETHNOLOGICAL PUBLICATIONS FROM THE FIELD COLUMBIAN MUSEUM.[1]

OF peculiar interest is Dr. Dorsey's account of the ceremonial organisation of the Cheyenne, which dates back, according to tradition, to two or three thousand years ago, being founded by Motzeyeuff, a prophet who came as a messenger from the Great Medicine with four great medicine arrows, which were sent to the Cheyenne as an emblem for their future, as they possessed magic, and the Great Medicine decreed they should produce effects beyond natural powers. These arrows are still preserved, but two of them are in the hands of the Pawnee. The prophet organised five societies—the Red Shield, Hoof-rattle, Coyote, Dog-men, and Inverted Bow-string. The first two of these are concerned with

[1] Voth, H. R.: "Oraibi Natal Customs and Ceremonies." Field Columbian Museum, Chicago 1905. *Anthropological Series*, vol. vi., No. 2. "Hopi Proper Names," *ibid.* vol. vi., No. 2. "The Traditions of the Hopi," *ibid.* vol. viii.

Dorsey, G. A.: "The Cheyenne: I. Ceremonial Organisation," *ibid.*, vol. ix., No. 1. "The Cheyenne: II. The Sun-Dance," *ibid.*, vol. ix. No.