phenomenon was at its brightest. (2) The complete continuity of the mock sun ring, the portion within the 22° halo being quite distinct. (3) The fact that the arc of upper contact had its *concave* side towards the sun, and extended for more than 90° on either side of the point of contact, gradually growing more diffuse and faint. This seems to be quite a special characteristic. (4) The peculiar shape of the mock suns and the positions of the two nearer the sun. These were not on the 22° halo, but outside the arc of upper contact, as shown in the sketch, the arc bisecting the distances measured along the ring between the mock suns and the halo.

At 0.30 p.m. the sky again became overcast, nor could any trace of the phenomenon be seen afterwards. In the afternoon and evening the wind was very cold, and there was a fair amount of cloud, but on the whole it was fine and sunny. The night, however, was wet and stormy.

W. McKEON.

Stonyhurst College Observatory, August 30.

Man and Environment.

I AM under the impression that it is recorded somewhere that Darwin expressed the following opinion:—He considered the fact that when man appears he appears, not as a "blind" subject of his environments, but with power to determine largely, not only his own environments, but those of generations of men succeeding his own generation; and, faced by this fact, he expressed a doubt whether, when man appears, some new factor may not come into play in "natural selection" (cf. "The Descent of Man," 2nd ed., p. 613, lines 15 to end of paragraph). But I cannot find the reference. Could any reader of NATURE assist me?

F. C. CONSTABLE.

Wick Court, near Bristol.

THE ATTAINMENT OF THE NORTH POLE.

DURING the past week great attention has been given to the announcement on September 1 that Dr. F. A. Cook had returned from north polar regions, having reached the North Pole on April 21, 1908. The interest excited by this statement has since been increased by a message, dated September 6, received at New York from Commander Peary, reporting that he reached the pole on April 6, 1909.

Commander Peary departed for the north from Sydney, Cape Breton, on July 17, 1908, his intention being to proceed by the Smith Sound route to his winter quarters on the northern shore of Grant Land. He hoped to start for the pole with fully-loaded sledges from the "Big head" he encountered in the Polar Ocean in 1906, to the north of Grant Land, in about latitude 84° N. The last information concerning him indicated that in the middle of August last year his ship, the *Roosevelt*, was continuing her voyage northwards from Etah, the expedition's base of supplies on Smith Sound. He took sounding apparatus with him, with the intention of obtaining a line of soundings from Grant Land to the pole. When he left last year he stated that, should he reach the pole, news of his success might be expected between August 15 and September 15, and the message received on September 6 has justified his expectations.

It is difficult yet to arrive at a satisfactory opinion as to the value of the observations from which the explorers conclude that they reached the North Pole, but as both Dr. Cook and Commander Peary are responsible travellers, it must be assumed that they realise the difficulty of determining the position of the pole, and took the necessary precautions to establish the validity of their claims. We have no right to doubt their statements, but the publication of the observations at an early date is greatly to be desired, so that the matter can be placed beyond question. In the case of Commander Peary, his previous work in Arctic regions is so well known that geographers

have accepted his announcement without hesitation, and a congratulatory message has been sent to him by the Royal Geographical Society. On the occasion of his previous expedition in 1906, he approached to within two hundred miles of the pole, and there was every reason to anticipate that this year he would reach the pole itself. His plans were known, and his long experience of Arctic conditions justified confidence in their successful accomplishment. There has, however, been much discussion upon Dr. Cook's journey and achievement, and as he claims to have reached the North Pole nearly a year before Commander Peary, it is of interest to give a few particulars relating to him and his expedition.

Dr. Cook is an American medical man, with varied experience of exploring work in both the Arctic and Antarctic regions. He served as surgeon on Commander Peary's second expedition to West Greenland in 1891, and was a member of the Belgian Antarctic expedition under Commander De Gerlache, which spent the Antarctic winter of 1898 drifting about on board the *Belgica* in the ice-covered seas to the southwest of Graham Land. Both in 1903 and 1906 Dr. Cook conducted expeditions to Alaska, with the object of achieving the ascent of Mount McKinley, 20,390 feet high, the loftiest mountain on the North American Continent, and after repeated failures reported that he had succeeded in reaching the summit. Two years ago it was announced that he was desirous of organising an expedition to the South Pole, and it came as a surprise to most people to learn in the autumn of 1907 that he was encamped at Etah, on the north-west coast of Greenland, and proposed to make a "dash" for the North Pole.

Briefly, Dr. Cook's story is that he left his base at Etah on February 19 of last year, accompanied only by a force of Eskimos, and dogs for pulling the sledges. The route varied slightly from that adopted by Commander Peary. Dr. Cook struck westwards across Smith Sound to Ellesmere Land, and continued westwards across that island to Nansen Sound, which separates Ellesmere Land from Axel Heiberg Land, one of the new lands discovered by the Sverdrup expedition on board the *Fram* in 1898-1902. From Cape Hubbard, the northernmost point of Axel Heiberg Land, Dr. Cook pushed out over the polar ice on March 18. Three days later the last of the supporting parties returned, and Dr. Cook continued his march to the pole with only a couple of Eskimos. Between the 84th and 85th parallels of north latitude, he sighted land to the west, but "the urgent need of rapid advance on our main mission did not permit a detour to explore the coast." This, continues Dr. Cook, in the narrative which he has supplied to the *New York Herald*, was the last sign of solid earth seen on the northward march, though, "from the 87th to the 88th parallel much surprise was caused by an indication of land ice. For two days we travelled over ice which resembled a glacial surface. . . . There was, however, no perceptible elevation, and no positive sign of land or sea." Farther north, Dr. Cook says, "signs of land were still seen every day, but they were deceptive illusions, or a mere verdict of fancy. . . . The mirages turned things topsy-turvy, inverted mountains, and queer objects even rose and fell in shrouds of mystery; but all of this was due to the atmospheric magic of the mid-night sun."

Finally, to quote the words used by Dr. Cook on September 7, in a lecture to the Royal Geographical Society of Denmark:—"On April 21 my observation gave $89^\circ 59' 40''$ —that is, $20''$ from the pole. We advanced the $20''$ and I made another observation, and several others that day and the next. I think there is no doubt that these observations will prove that we