

above this line, and seemed to be unaccountably out of place. As, however, the moon was little past the first quarter, and the terminator nearly a straight line, and only slightly inclined from the vertical, a line drawn perpendicular to it would have passed through the left-hand patch, and I imagine that its position was due to this inequality in shape of the two sides of the visible moon. The atmosphere was hazy, the moon though clearly visible appearing as in a slight fog. No colours were distinguishable at any part of the halo.

F. T. MOTT

Birstal Hill, Leicester, April 17

Benevolence in Animals

Two or three years ago Dr. Allen Thomson gave me an instance of benevolence in a cat which is so closely similar to one communicated to you by Mr. Oswald Fitch that for the sake of corroboration I may state it.

The cat belonged to Dr. Thomson, and one day came into the kitchen, pulled the cook by the dress, and otherwise made signs showing a persistent desire to attract attention. Eventually the cat led the cook out of doors and showed her a famishing stranger cat. The cook thereupon gave the stranger some food, and while this was being discussed, Dr. Thomson's cat paraded round and round her companion, purring loudly with a satisfied sense of well-doing.

GEORGE J. ROMANES

"Medioscribed Circle"

IN this week's NATURE (p. 595) the use of the *medioscribed* circle is suggested in place of the well-known "nine-point" circle. If a change is desirable, would not "mid-point" circle be equally expressive?

R. T.

April 20

AGRICULTURE IN MADRAS¹

THE Government establishment at Saidápet has now been in existence about twelve years. It consists in part of an experimental farm, and in part of an educational establishment, in which, at the date of the last report, forty-one native students were receiving instruction in the science and practice of agriculture. The whole is under the superintendence of Mr. W. R. Robertson. The object in view is to improve the condition of agriculture in the Presidency. This is indeed urgently needed. With a large and increasing population, the soil is in general wretchedly cultivated, and reduced to a low state of fertility. The farm at Saidápet is the centre of many useful agencies. Here new crops, new breeds of cattle, and improved implements are carefully tried. Here the teaching of European science is reduced to practice, and methods of cultivation suitable to the conditions of Indian agriculture are perfected. While by means of the educational department, by tours in the country, distributions of seed, ploughing competitions with different implements, and various other agencies, the endeavour is made to bring these improved methods into use by the native farmers.

The meteorological records kept at the farm exhibit in a striking manner the difficulties under which Indian agriculture must be pursued. Thus in the season 1880-81 the rainfall in September was 10.9, in October 10.7, and in November 19.6 inches, while during the whole six months from January to June only 2.35 inches were recorded. Long-continued heat and drought are thus followed, on the arrival of the monsoon, by a deluge of rain. It is pleasing to notice that the director of the farm is quite abreast of the latest scientific teaching respecting the best mode of meeting the difficulty in question. It is plain that in the rainy season the land will be washed clear of all soluble plant-food; all nitrates formed in the soil during the hot season will thus be lost, unless they have been already assimilated by a crop. Mr. Robertson recommends that, whenever possible, advantage should be taken of the first commencement of rain in June or July to sow the land with a green leguminous crop (horse-

gram). In most years there will be enough rain to maintain such a crop in growth during the summer months. This crop will collect and assimilate a great part of the nitrates in the soil. At the commencement of the wet season the green crop is to be ploughed into the soil, and forms an excellent manure for the principal crop of the year, which is then sown. Mr. Robertson refers apparently to the experiments at Rothamsted when speaking of the quantity of nitrates annually formed in a soil; the amount he mentions (40 lbs. of nitrates¹ per acre) is, however, far below the truth. The quantity of nitrates found in five successive years in the drainage water from uncropped and unmanured land at Rothamsted amounts, indeed, on an average, to nearly 3 cwt. of Indian saltpetre per acre per annum.

In India agriculture depends much for its success and permanence on irrigation, and vast sums have been, and will be, expended on irrigation works. Here again, however, the question of the presence or absence of nitrates is an important factor, which has been almost entirely overlooked, engineering rather than chemical skill having been employed in the direction of the work. It should always be borne in mind that a water containing nitrates supplies not only water but *manure*. The native farmers are generally quite aware of the difference in value of different water-supplies, and reckon the water from the village well as worth far more than that procured from the Government canal. To the engineer it appears a ridiculous waste of power to lift water from a well when a water-supply is available at the level of the land. But the native is right; his well-water is rich in nitrates, and for the farmer's purpose far more valuable than the purer water of surface drainage found in rivers and canals. It should always be borne in mind in plans for irrigation, that the drainage from arable land, and from inhabited districts will always yield the best irrigation water. By restoring to land in time of drought the plant-food lost in time of flood we are pursuing a truly scientific economy.

R. W.

ANTHROPOLOGICAL NOTES IN THE SOLOMON ISLANDS

WITHOUT going into the general question as to the position which these islanders hold to the other Pacific races, I will briefly state the results of numerous measurements and observations which I made during my visit to these islands in 1882. As the surveying work of this ship was confined for the most part to the large island of St. Christoval and the adjacent small islands, my remarks will refer more particularly to the natives of this part of the group.

The average height of a man of St. Christoval is about 5 feet 3 inches or 5 feet 4 inches, whilst the span of the arms generally exceeds the length of the body by from 4 to 5 inches. Both men and women are usually of a good physique, robust and well-proportioned; but one may find in the same village community weak, puny, thin-limbed individuals associated with others of a strong muscular frame, with well-rounded limbs and a good carriage.

The colour of the skin varies considerably in shade from a very dark brown, approaching black, to a dark copper hue. The elderly adults are as a rule more dark-skinned than those of younger years, the difference in shade being attributable partly to a longer exposure by reason of their age to the influence of sun and weather, and partly to those structural changes in the skin which accompany advancing years. Not unfrequently, amongst a group of dark-skinned natives a man may be observed whose skin is of a pale sickly hue, and who at the first glance may be thought to afford an example of recent

¹ Annual Reports on Government Agricultural Operations in the Madras Presidency, 1880-81 and 1881-82.

¹ Possibly in Mr. Robertson's Report "nitrates" is here a misprint for "nitrogen."