It was a glorious quest well worth the effort, and all the party thoroughly enjoyed the work in spite of the disappointment.

We had a 21-inch siderostat and were working from it with a 6-inch mirror of 7 ft. focus, a 6-inch mirror of 24 inches focus, a two-prism objective prism spectroscope for the flash spectrum, and a grating spectroscope for the infra-red end. All our spectrum plates were special neocyanine ones with the ammonia doping to make them super-sensitive. A. TAYLOR.

SNOWDON.

On the morning of the eclipse a whirling mist of cloud slashed with streaks of rain narrowly restricted the range of vision on Snowdon summit but did not quench the sunlight, which it uniformly diffused. The view-point which I had chosen the day before was not upon the cairn or the platform which, with buildings, artificialise the highest peak, but a narrow spur of rugged rock about fifty feet lower, overhanging precipitous descents on either hand of which the bottom was undiscernible on either day. Pointed battlements of rock a few feet distant fenced the turret of my outlook; beyond, the luminous obscurity of cloud reached from the zenith nearly to the nadir. I was alone, and no human form loomed into sight through the mist.

The wildness of the scene was enhanced by the veering and backing of a gusty wind which drove the pelting rain upon the crags, and its monotony was unrelieved during the partial eclipse, for the murk of the morning seemed but a thickening of cloud. At length, on a sudden, there was a shutting-off of light as if a curtain had been quickly drawn part way across the window of heaven. Before I could recover from the start, a second and greater darkening occurred, as if the window had been completely curtained, and all around was the blue-blackness of night. The jutting rocks were blackest. The atmospheric background, above and below, was uniform in tint, no longer showing whirls of mist or stretches of rain.

The condition of an unusually sombre night had continued for a sufficient number of seconds to let the mind begin to brood, when I was awakened as from a dream by the dawn of a new day, miraculous from the suddenness of its light and remarkable for the quick change of tint to a ruddy glow. The brightening of this first drawing-back of the curtain was much greater than the darkening of the first partial closing. Before surprise had passed there was a second flood of light, and one felt that the window of heaven was now completely uncurtained. There were no more phenomena, for ours was a total eclipse without the incidents of the partial phase. The narrowing of the view was lamentable, but the concentration in time to one breathless half-minute was extraordinarily dramatic, and the solemnity of the surroundings amply compensated for the discomforts of a lofty and exposed situation. VAUGHAN CORNISH.

Archæological Work at Gerar.

By Sir FLINDERS PETRIE, F.R.S.

IT had long been desirable to obtain a more exact scale of dating in the archæology of Palestine. For this purpose the Egyptian connexions were needed, and the British School of Archæology in Egypt therefore settled last winter upon the mound of the city of Gerar, nine miles south of Gaza, almost in the desert. An area of about an acre was cleared, to thirty feet deep, through six superimposed layers of building from 400 to 1500 B.C. Each chamber found was lettered on the plans, and each object found was given its chamber letters and foot level. The planning was continuous, and 2000 objects were drawn in outline for publication. The record is therefore complete, without needing notebooks or card catalogues. The date of each of the six layers of building could be ascertained within ten years by the external history; the rate of accumulation happily proves to accord with the time scale throughout, to within a foot,

Iron furnaces of about 1200 B.C. were found, and by them were very large tools, as a pick of seven pounds weight, hoes, and plough points. The ore was probably hæmatite, resulting from decomposition of pyrites from the Beersheba basin. Iron knives were made from 1350 B.C., probably the earliest manufactured iron known. The flush of gold named in Judges viii. is apparent in the many earrings and a gold frontlet which were all of that age, while none was found of later times. The influences were from the east and central Asia under Shishak, 900 B.C., but from Italy and Cyprus in 800 B.C. The business of the city was making the arms and clothing for the north-west tribes of Arabia, as now in modern Gaza. The position was important as being on the road from Egypt to the Judæan hills, and also as commanding the coast road; hence the Egyptian kings fortified the place whenever they occupied Palestine. The Persians also made this an army base of supplies for invading Egypt, building large granaries to hold enough corn for 100,000 men for two months. This fertility of the plain in good seasons accords with the great number of flint sickles found, of about 1800 to 1400 B.C., and the hundred-fold crops named in Genesis xxvi. The Philistine settled here was apparently a corn-factor to collect grain for supplying Crete, like the Philistine at Ekron in the middle of the Shephelah corn land.

It appears that the coast must have been submerged as much as 125 feet in late Roman times, and recovered later. There are stratified silt deposits up to that level at Gerar containing Roman pottery throughout, and three miles nearer the coast the stream cuts through 50 feet of these

deposits with Roman pottery from base to top. The top plane is at the same level at both places. As the valley is two miles wide and fifty feet deep, any artificial dam is improbable, and the silting must therefore have been due to an estuary reaching up to 125 ft. There are great deposits of recent shells on hills by the coast up to about 80 ft. The Egyptian movement at Alexandria was at least 40 ft. of submersion, and a later recovery of 18 ft. This corner of the Mediterranean needs an historical survey, including the pottery and other remains. The collection brought to London will be on view at University College, Gower Street, until July 16.

News and Views.

IT is announced that the Secretary of State for the Colonies has appointed a Committee "to formulate practical proposals for submission to the Colonial Governments to give effect to the resolution for the Colonial Office Conference on the subject of Colonial Agricultural Scientific and Research Services." These proposals are to "include a scheme, based on contributions to a common pool, for the creation of a Colonial Agricultural Scientific and Research Service available for the requirements of the whole Colonial Empire for the support of institutions needed for that purpose, and for the increase of research and study facilities in connection with specialist services of the Colonies generally." The committee is thus constituted: Lord Lovat, Parliamentary Under-Secretary of State for Dominion Affairs (chairman), Mr. W. Ormsby-Gore, Parliamentary Under-Secretary of State for the Colonies; Sir Graeme Thomson, Governor of Nigeria; Mr. A. S. Jelf, Colonial Secretary, Jamaica; Mr. O. G. R. Williams, Assistant Secretary, Colonial Office; Major R. D. Furse, Private Secretary (Appointments) to the Secretary of State for the Colonies; Sir J. B. Farmer, Dr. A. W. Hill, Mr. F. L. Engledow, and Dr. A. T. Stanton, Chief Medical Adviser to the Secretary of State for the Colonies.

IF reference be made to the second paragraph of the leading article in this issue of NATURE, it will be observed that to this committee has been relegated one part of the more comprehensive task given to the Committee appointed by the Colonial Office Conference at its first session. At that Conference were gathered together official and authoritative representatives from most of the thirty different colonial administrations. The scheme for agricultural research recommended by the committee they appointed involved them in a total annual cost of £175,000, the greater part of which is already a charge on their revenues. The Conference approved the recommendations of the committee, which in the main were those of a Commission on Agricultural Research and Administration in the Non-Self-governing Dependencies, appointed some years ago, the report of which had just been published. General consent might have been obtained immediately, it might be presumed, for some systematic method of determining the contributions of the various colonial governments to the central pool and matters of detail left to the Agricultural Research Council. The appointment of this further committee will inevitably involve more delay in the long overdue reorganisation of the colonial agricultural research and scientific services.

THE Golden Valley is one of the chief beauties of the famous Hindhead district, in the neighbourhood of Farnham and Winchester, and its wild and beautiful slopes, wooded with pine, birch, and hawthorn, and chequered by gorse and broom, make an essential complement to the neighbouring land secured for the people under the National Trust. At short notice the Golden Valley was put up to sale for building plots, but the prompt action of Dr. Marie Stopes in stepping in to purchase the Valley (at the surprisingly low figure of £5650) gave the residents time to form a committee to collect funds which would save the land from the builder. The completion date for the sale was June 30, but the vendors have granted a short extension, and the National Trust, to which the property would be handed over, now issues an urgent appeal for the small sum needful to complete the purchase price. Residents and local sympathisers have played their part, for already approximately £4500 has been subscribed. Less than £1500 is required, and we feel assured that so good a cause need only be mentioned to obtain the support it deserves. It would be a calamity were this spot, where artists, writers, and naturalists have gained inspiration, to become lines of villas. Contributions to the Golden Valley fund, so marked, should be sent to S. H. Hamer, The National Trust, 7 Buckingham Palace Gardens, London, S.W.1.

ON July 14 occurs the centenary of the death of Augustin Jean Fresnel, the distinguished French physicist who shares with Young the honour of establishing the undulating theory of light. Born at Broglie (Eure) on May 10, 1788, Fresnel was a few years younger than Arago, Brewster, Biot, and Malus, all of whom laboured in the same field. He was educated at Caen; at sixteen years of age he passed into the École Polytechnique, and after being trained as a government civil engineer in the École des Ponts et Chaussées, was employed in various provincial departments. His important scientific work began with his paper on diffraction read to the Paris Academy of Sciences in 1815. Just as Young in England met with opposition, so Fresnel had to face the criticisms of Laplace, Poisson, Biot, and others. Fresnel, in addition to his theoretical work, made practical improvements which led to the adoption of polyzonal lenses in lighthouses adopted first in France and then in foreign countries. Towards the end of his life he acted as examiner to the École Polytechnique, but his various duties proved somewhat too much for his feeble constitution, and he died at