

other plate. The effect of the light of the sky or of twilight may thus be eliminated, and the light of the comet compared with that of a star of known magnitude spread over a standard area. The two photographs may also be compared directly with a suitable photometer.

Messrs. Barnard and Frost, having also the benefit of Mr. Parkhurst's opinion, suggest as an alternative and possibly better method the extra focal use of a single camera. The intensity of the extra-focal cometary image could be reduced to the focal plane as accurately as for the star images. The relative values on different nights would always be correct.

Useful suggestions for the photometric observations of the comet may be derived from a paper by Dr. Rosenberg upon photometric observations of the Morehouse comet, contained in the *Astrophysical Journal* for November.

The polarisation, if any, of the comet's tail may best be studied by photographs taken with a camera having a double-image prism placed over the lens. The prism should be turned so that the two images are perpendicular to the direction of the sun. The two images of an unpolarised object should be alike if the correction for colour is the same for both, otherwise it will be necessary to take a second photograph, turning the prism 180° . If the light is polarised, one image may be fainter than the other, as in similar photographs of the solar corona. Measures may be made as described in the preceding paragraph.

Bands will doubtless be seen if the comet is examined by means of a Savart's polariscope or similar instrument, but it is, in that case, difficult to distinguish between slight polarisation of the comet and the strong polarisation of faint sky-light.

Minor Notes.

The following titles may be specified as minor matters not included above, but which may in some circumstances become of importance, viz. :—

The head of the comet should be carefully examined for traces of phase. Possible disturbances may be found in the comet, due to its close approach to Venus on May 1 and to the earth on May 18. A transit of the earth through the comet's tail is possible at or near the latter date, and, if such should occur, a meteoric shower should be looked for and observed with reference to a determination of the meteoritic particles, their frequency, size, &c. Resultant disturbances of the electric potential of the earth's atmosphere are possible, and the cooperation of meteorological observers, and especially of national weather bureaux, is earnestly desired in this connection.

Although the amount of refraction experienced by light in transit through a comet is known to be very small, it seems desirable to make investigation of the matter photographically with long-focus telescopes. The position of a sufficiently bright star near the nucleus, or in the brightest part of the edge of the tail, should be referred to a group of more distant ones, and the resulting position of the star compared with that resulting from another plate exposed after the comet has left the star.

THE HEADMASTERS' CONFERENCE.

THE headmasters of sixty of the leading public schools met at the Leys School, Cambridge, on December 22 and 23. On the first day the chief matter discussed was the work of the Public Schools' League for Imperial Land Settlement in the Overseas Dominions, which was strongly supported by the Rev. Dr. Gray (warden of Bradfield College). Under the auspices of the committee, approved boys are to be sent to a Canadian farm after completing their school career. A course at an agricultural college is to follow a year's practical training on the farm, and it is hoped that the public schools will assist the supply to the dominion of "men of character, intelligence, and energy, possessed of a little capital, who will settle down seriously and will assist in bringing under cultivation the immense areas of land at present untouched." The conference pledged its support to the establishment of a central office in London for the permanent work of the league. Later in the day the meeting asked for fuller recognition of English in the university examinations for admission. All the speakers emphasised the importance of the subject,

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which was no longer regarded as something for a spare hour; not a few were of opinion that to add English to the entrance examinations would be the worst service they could do to the cause. Fear was expressed lest a set period or figure in literature might be made compulsory, and the comments of some speakers upon the university examinations were decidedly caustic.

On the second day the meeting debated the report of the curriculum committee as to a scheme of studies for schoolboys from the age of nine to about sixteen. The conference passed, practically unanimously, the three following resolutions:—

That this conference approves the principle laid down in the curriculum report of the committee that a boy should not be allowed to begin Greek until the foundations of Latin and French have been securely laid and he has received systematic training in English.

That it is essential to give such a definite position to English and French in the entrance scholarship examinations that these subjects may not be sacrificed to a premature study of Greek; that this meeting be urged to take such steps as will ensure full consideration of the nature and results of the mathematical teaching of boys from nine to sixteen; and that it be referred to a subcommittee to consider and report to this meeting.

That a special meeting of those headmasters who are in favour of the recommendations of the committee be summoned in the early part of next year to take steps to give practical effect in their own schools to the proposals made by the committee, and with this object in view that the secretary be instructed to send a circular to the members of the conference in the third week of January asking whether they are generally in favour of the recommendations of the committee, and, if so, whether they will be prepared to meet in London on a certain date in February or March.

There were several points in the report which were not dealt with in the resolutions, e.g. the committee is convinced that German should be excluded from the preparatory school. At the present time the two languages must be Latin and French, in order to provide a basis of education preparatory to classical and modern sides. Dealing with mathematics, the committee reports that in some cases the attempt is made to cover too much ground for the average boy, yet in others there is a danger that mathematics may be sacrificed entirely.

Although reformers will wish that the headmasters had gone further, it is a matter for congratulation that this year's conference exhibited a progressive spirit alike in resolutions and in individual speeches. Not only did the meeting recognise the relation of the public schools to the Empire, but it deprecated early specialisation in Greek, encouraged the advance of English studies, and adopted the principle of differentiating curricula to suit varying capacity. Above all, the headmasters acknowledged the obligation to give practical effect to the opinions which they expressed in conference. Perhaps we may not have to wait many years before drawing, nature-study, music, and handwork are accorded the status of essential subjects in the preparatory curriculum.

G. F. D.

WATER SUPPLY IN THE UNITED STATES.¹

IT is an obvious truism that water is the commonest and most plentiful substance in nature. Oceans, seas, lakes, rivers, floods, and streams innumerable testify to its universality, and its indispensability is no less manifest. Whenever man penetrates into virgin territory, his first care is to find water; wherever civilisation sets up her ultimate standard of health and comfort, she establishes and secures an efficient water supply. Water is the embodi-

¹ Water Supply Papers: No. 224. Some Desert Watering Places in South-eastern California and South-western Nevada. By Walter C. Mendenhall. Pp. 98.

No. 228. Water Supply Investigations in the Yukon-Tanana Region, Alaska, 1907 and 1908. By C. C. Covert and C. E. Ellsworth. Pp. 108.

No. 230. Surface Water Supply of Nebraska. By J. C. Stevens. Pp. 251.

No. 231. Geology and Water Resources of the Harvey Basin Region, Oregon. By Gerald A. Waring. Pp. 93.

No. 224. Papers on the Conservation of Water Resources. Pp. 96. (United States Geological Survey. Washington: Government Printing Office 1909.)