

its ability to use materials at command and fit them to its needs. The highest degree of civilisation in maritime races has always been marked by activity in boat-building and by variety of design and rig. In no case has this been more notable than in the history of China and of Holland, and in the Adriatic in the fifteenth century, in Europe during the last two centuries and in the United States since 1780. The Negro, the American Indian, and the Slav, on the other hand, have never designed a sea-going boat or cut a sail. It has not been for want of water-ways or of opportunity. It has been simply owing to a lower class of intelligence and to want of originality and enterprise."

Mr. Smyth's allusions to the indirect influence upon character and resource of life and work in vessels equipped with sail power are also notable:—"It is above all in the men who handle sails that the self-reliance which is bred by tempest, darkness and the shadow of the Angel of Death reaches its highest point. The seriousness, from this point of view, of the loss of masts and yards to the Navy has been fully recognised, and it has only been reluctantly ac-

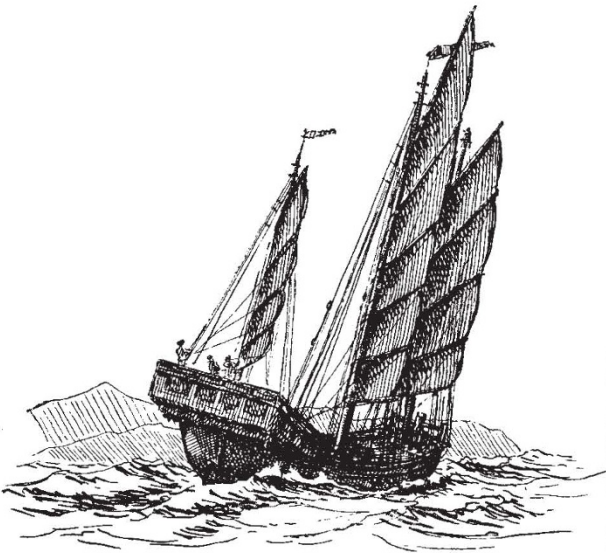


FIG. 2.—Hong Kong Junk. From "Mast and Sail in Europe and Asia."

ceded to on account of the pressing importance of other more essential forms of training. But amongst the coasters and fishermen of the world the mast and sail more than hold their own; and here a student of the sea will find himself in a by-path of the modern world, among the old thoughts, the old traditions, the old methods, and the old virtues of the great seas. And when this civilisation shall have condemned itself and passed the way of others, the lug-sail and the lateen will still be navigating the deep, conned by other races, but the same grim, great-hearted sailor men."

Enough has been said to indicate that, in our judgment, this book should find a hearty welcome from all who love to sail the seas and manage their own craft, and from all who are interested in the maintenance and development of that hardy race of seamen bred on the coasts of the United Kingdom, and leading a life of hardship, difficulty, and danger which must develop qualities of the highest value to the maritime greatness of the British Empire.

W. H. WHITE.

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### THE SOLAR ECLIPSE OF 1905.

IT is very satisfactory that reports of the recent eclipse expeditions indicate that at some stations the weather conditions were all that could be desired, because we know that at several stations opportunities for securing good results were frustrated by clouds. The Hamburg Observatory party chose a spot which, however, did not come under the second category, and judging by the first portion of the report published,<sup>1</sup> which deals chiefly with the general arrangements and journey to and from the position of observation, it achieved complete success in all lines of work. The report itself is of great interest, and is accompanied, not only by excellent reproductions from photographs of camp scenes, &c., but by capital pictures of the corona. The style of reproduction here employed is to be highly recommended, and other publishers of reports might with advantage copy the good example set.

The party was not a very large one. It consisted of Prof. R. Schorr, the director of the observatory, Dr. Schwassman, the observer, and an observatory attendant, Herr Beyermann, and they were assisted by Prof. Knopf, director of the Jena Observatory, who joined the expedition.

The station selected and used as the observing position was Souk-Ahras, in Algeria, lying on the railway from Tunis, and to the south-west of Bône. The accompanying illustration shows the station occupied, with the several instruments in position. The work of the expedition was chiefly devoted to the following points:—structure of the inner corona; photography of the outer corona and extensions; a search after intra-Mercurial planets; the determination of the brightness of the corona and the total daylight during the eclipse; contact, meteorological, and other observations. The only spectroscopic work attempted was the employment of a Thorp diffraction grating to secure the spectrum of the corona.

For the attack on the inner corona a horizontal telescope of 20 metres focal length was employed. With this, very excellent photographs were obtained. Perhaps the most interesting part of the account of these photographs is the recording of three or four oval, ring-formed, cloud-like caps which lay at a distance of 4 to 6 minutes of arc above the large prominence on the east limb, and indicated a close connection with the eruptive nature of the prominence. These rings, it may be remembered, were also photographed by the Greenwich Observatory party under the direction of the Astronomer Royal, which observed at Sfax, in Tunisia, so that an independent photographic record of them is very important, as this is the first time they have been caught on the sensitive film. That such phenomena have been previously *seen* will be gathered from the following extract<sup>2</sup> relating to some spectroscopic observations made by Sir Norman Lockyer in 1870:—

"And what was going on, while this was happening? A prominence, obviously with its root some distance from the limb, had gradually travelled beyond the limb; in appearance it became very much more elevated, and seen, as it were, in perspective over the limb; but what I saw first was very rapidly changed, in a way that would be explained by supposing that cyclones were being shot up into the solar air like bombs! the changes in the F line were so rapid and curious. I was not observing with an open slit, so I at once coined the term 'motion forms,' because the forms observed did not in any way represent the shape of the prominence. But the

<sup>1</sup> *Mittheilungen der Hamburger Sternwarte*, No. 10.

<sup>2</sup> "Solar Physics," by Sir J. Norman Lockyer, p. 403.

extreme velocity can be imagined from the great departure of those bright lines from the stable dark line F, seen below them, and not only that, but we can think out the explicit character of this prominence action. *They were really in this case, as already stated, smoke rings thrown up by enormous circum-solar action.*"

We thus see that after the lapse of thirty-five years these "lozenge" forms, as they were then called spectroscopically, have been caught in the mesh of the photographic plate.

For the search after intra-Mercurial planets two objectives of 10 cm. aperture and 4 metres focal length were used equatorially, and plates were exposed for 120 and 63 seconds. So far as the negatives have been examined, no unknown object has been detected, but it is interesting to remark that on both plates Mercury appears of the fifth or sixth magnitude eleven hours after inferior conjunction.

Successful measures were made of the brightness of the corona with a Weber photometer by Prof. Knopf, but the reductions are not yet quite complete.

one he has chosen, for in the course of some 300 octavo pages he traces the story of the district in which Pickering is situated from pre-Glacial times up to the date of his publication, including the geology, the archæology early and later, local legends and folklore; and very good miscellaneous reading he makes of it. The earlier sections, however, can scarcely be said to conform with his title-page, for it is admitted that for many thousands of years after the period of his second chapter no human being yet existed in Britain in the latitude of Pickering, and the town itself would, of course, be even later.

There is, however, no harm in this, and it must be confessed that the admirable material existing in the neighbourhood, and the masterly way in which much of it has been treated by competent hands, offer great temptations to include nature's story as well as man's. The Kirkdale cave is one of the best known of these natural features of the locality, and was exhaustively described by Dr. Buckland in 1822 before the Royal Society, in a paper which is a model of scientific analysis. The physical conformation of the country,



FIG. 1.—The Hamburg Observatory's Eclipse Camp in Souk-Ahras. The 20-metre coronagraph is on the right, and the twin equatorial planet-finder on the left.

Shadow bands were clearly seen, and the dimensions of those measured were about 50 cm. long and 4 cm. to 5 cm. broad.

W. J. S. LOCKYER.

#### THE STORY OF AN ENGLISH TOWN.<sup>1</sup>

THE modern changes in literary methods and the demands of the reading public have altered the character of many classes of books, but none has been so much affected as that dealing with topography. The subsidised family history, the elaborate folding pedigrees, plates of armorial bearings or of equally uninteresting tombs of former magnates of the locality, have disappeared from such works, unless their intrinsic interest coincides with that of the subject of the book. Genealogists and students of family history are now provided with publications of their own, surely a change of a practical kind, and one which allows the substantive matter of a topographical work to take its real place. Even when the older fashion is cast aside for the new, however, there are many alternatives in the treatment of local history. Mr. Gordon Home may be said to be thorough in the

the hills around rising to a height of upwards of 1400 feet, naturally provides an admirable field for the observation of the action of ice, and here Mr. Home has taken full advantage of the survey made by Prof. Kendall, while the existence and behaviour of the glaciers in the valleys converging on Lake Pickering in the lesser Ice age are made very clear by the diagrams provided. Naturally enough, there is a good deal of elementary geology in these chapters, and Mr. Home at times also gives his imagination a somewhat free rein, but he does not confuse fact and imagination.

Coming to the later times, where geology gives place to archæological conditions, we are on surer ground; the relics are more plentiful and more directly comparable with similar remains in other localities and even other countries. Hypothesis and even imagination still have their uses, but the more abundant material should keep the student to the safer zone of comparative archæology. Here again, in the Barrow period, Mr. Home is fortunate in having masters of the craft to appeal to. Dr. Thurnam and Canon Greenwell have both provided ample matter for the story of man during the later Stone and early Bronze ages, and Mr. Home might have drawn upon them more largely with advantage to

<sup>1</sup> "The Evolution of an English Town; being the Story of the Ancient Town of Pickering in Yorkshire." By Gordon Home. Pp. xix+298. (London: J. M. Dent and Co., 1905.) Price 10s. 6d. net.