

## GEOGRAPHICAL NOTES

LIEUT. DANENHAUER and two of the crew of the ill-fated *Jannette* have arrived at St. Petersburg, where they were met with a hearty reception. Lieut. Danenhauer has little hope that Capt. De Long and those with him can have survived, though Engineer Melville is searching for them. He speaks of the unsatisfactory nature of the charts of the Lena mouths and that part of the Siberian coast, and states that Baron Nordenskjöld has added little to our knowledge in this respect. But the Baron did not profess to do so, and indeed could not, seeing that his aim was to get over the ground as quickly as possible. The Lieutenant also is not sanguine as to the possibility of opening up trade by the mouth of the Siberian rivers, forgetting apparently that the time of his arrival at the Lena mouth was past the time most favourable for navigation, and the conditions of his arrival were certainly unfortunate.

WRITING on Chinese maps, the *North China Herald* says that the present dynasty has made greater efforts at map-making than any former one, and appears to have been the first to introduce into them lines of latitude and longitude. The old maps of China are very vague and inaccurate, and are not ancient in any sense. Ssu-ma-Chien when compiling his history did not judge it needful to illustrate it with maps, but his commentators have supplied this deficiency, and recent editions of his work contain maps poorly done of China at successive periods. The geographical works of the Han dynasty do not contain maps. The first maps that have been retained in modern editions of ancient books are those of the Sung dynasty, and they seem to be connected with the invention of printing, which dates from A.D. 932. It was the influence of foreign countries that caused the Chinese to enter rigorously into the work of map-making at this period. The Buddhists began to compile works with maps of India and the countries through which lay the routes to India. One of their larger works at this time contains a map of China, of Persia and Rome, according to the geography of the Han dynasty, and a map of India as known to the Buddhists. The Mahomedans followed the latter in teaching their notions of map-making to the Chinese. But all through the Sung dynasty till the 13th century, when the Mongols established their Empire, Chinese scholars possessed but imperfect views of geography, and failed to obtain clear ideas either of foreign countries or of their own in regard to topography. During the Mongol domination many Europeans visited China and brought with them a certain portion of geographical knowledge. No steps, however, were taken by the Government to improve maps and common geographical books, which remained as bad as before. The Chinese had junks in the Indian Ocean from the 5th century, yet in the 16th century we find in maps of that time that Cambodia and Siam are islands; that Java lies west of Siam, that the Greek empire (Fulin), Arabia, and Medina are three small islands a little to the west of Java, and that an immense southern continent fringes the map from a little south of Ceylon to a point not far south of Java, and again farther east. Good maps have only existed since the Jesuit missionaries came to China, and they belong only to the present dynasty. The Emperors Khang-hi and Kien-lung encouraged the survey of their dominions and the construction of good maps. Danville's *Atlas Chinois* is the result in French of the surveys made under Khang-hi by Gerbillon and his companions. All European maps of China rest mainly on those surveys. Among the atlases of the empire, that made by a former governor of Honan province deserves special praise. It is on a large scale. Each square of 200 *li* represents a square degree. Two inches and a half represent 200 *li*. This affords ample space for names, which are freely inserted on the most frequented roads. As a specimen of engraving it is rough, and of course being on wood and done by provincial workmen it cannot equal the copperplate maps which were issued last century from the Government workshops in Peking. But it is in comparison with past times a great advantage to the people to have a map on a large scale for four or five dollars, on which both degrees and miles are marked by a system of chess-board squares with quite sufficient accuracy for ordinary use. For this they are indebted to Khang-hi and the Jesuits.

MR. C. R. MARKHAM has presented to the Geographical Society a long and careful report on the instruction at present supplied to this country in practical astronomy, navigation, route-surveying, and mapping. Although much improvement has taken place since nautical astronomy was placed in the South Kensington programme, still Mr. Markham shows that

much remains to be done ere practical instruction in these important subjects is on the footing on which it ought to be in a country whose interests are so dependent on good seamanship. The Council, on the basis of Mr. Markham's report, have made a series of recommendations to the Board of Trade and the Lord-President of the Council; the former are recommended to raise their standard, and the latter to place navigation and nautical astronomy among the science subjects in the New Code. The report and the recommendations deserve serious consideration.

THE last two parts of the *Deutsche geographische Blätter* contains detailed accounts, by the Brothers Krause, of their researches in the Chukchi Peninsula, accompanied by maps and illustrations; this forms a valuable addition to the information obtained by the *Vega* Expedition. Nos. 2 and 3 of the *Mittheilungen* of the Vienna Geographical Society contains a paper by Herr Ferd. Blumentrit, on the Ancestor-Worship and Religious beliefs of the Malays of the Philippine Islands.

M. MASCART is delivering daily lectures to the naval officers who are to leave on June 1, on the Antarctic Expedition now fitting out at the expense of the French Government. These lectures are delivered at the Parc St. Maur, where instruments have been established. The lecture will be published by Gauthier Villars, after having been revised.

IN the April number of *Petermann's Mittheilungen* M. Erne-t Marno gives an interesting account of the barriers of the Bahr-el-Gazal, and their removal from April to June, 1881. Dr. Fera Loiol of Prag contributes a long paper of great interest, with numerous illustrations, on the formation of terraces in the Alpine valleys. Dr. Oscar Drude writes on the botanical exploration of North Africa from Morocco to Barca.

"A VISIT to Madeira in the Winter 1880 81" is the title of two lectures by Dr. Denis Embleton, of Newcastle-on-Tyne, published by Messrs. Churchill. Dr. Embleton, besides giving his own experience, has brought together much information on the islands in all their aspects.

THE Dutch Polar Expedition, which participates in the great International undertaking, will start for Port Dickson on July 1 next. Half the cost is borne by the Dutch Government, the other half having been raised by public subscription. The expedition will return in 1884 if all is well. At the same time the annual Dutch Polar Expedition to the Novaya Zemlya region—the fifth—will start early in May from Amsterdam, commanded by Lieut. Hoffmann. They hope to return in October.

SOME OF THE DANGEROUS PROPERTIES OF DUSTS<sup>1</sup>

THE lecturer pointed out that the dangerous properties of dust with which he proposed to deal were altogether distinct from the subtle, invidious dangers of microscopic dust-motes which pervade the air—dangers the existence and nature of which had been fully revealed by the classical researches of Pasteur, Tyndall, &c.

Compared to those, the dangers which he would discuss were as palpable as are the comparatively gross dust-particles which give rise to them, and yet, although their existence and, to a great extent at any rate, their causes have been known and demonstrated for many years, those who are most directly interested in them and should be most keenly alive to them appear either to have ignored their serious import or to have undervalued the teachings of practical experience and scientific research regarding their causes and effects.

Seven years ago Mr. Abel, in a lecture on Accidental Explosions, delivered at the Royal Institution, directed attention to the fact that solid combustible and especially inflammable substances, if sufficiently light and finely divided to allow of their remaining for a time thickly suspended in air, may on application of sufficient flame to them while so suspended, produce explosive effects; behaving, in fact, similarly to mixtures of inflammable gases or vapours with air, with this difference, that the mobility of the molecules of these insures the ready production of complete mixtures of them with the air, so that combustion, when once established, proceeds almost instantaneously throughout such mixtures, whereas, in the case of a mixture of solid dust particles and air, the rapidity with which combustion spreads

<sup>1</sup> Abstract of Lecture at the Royal Institution, April 28, 1882, by Prof. F. A. Abel, C.B., F.R.S.