

tent to England (and England has forty thousand blind), the vastness of this philanthropic work will be apparent. Mr. Murray noted the actual sounds used in speaking Chinese, and succeeded in reducing these to four hundred, each being represented by a different arrangement of dots. He tried his first experiment on a blind beggar taken from the streets, and in six weeks taught the boy to read, and even to write a little. The fame of this experiment soon spread, and pupils crowded to be taught. The system was extended to include music and to adapt itself to the various dialects, — no mean task, since the Bible must be printed in eight different sets of characters to be understood all through China.

EXPLORATION AND TRAVEL.

Danish explorations in East Greenland.

It is stated in Copenhagen, says *Nature* of May 5, that an expedition will be despatched late this summer by Herr A. Gamil, the equipper of the *Dijmphna* expedition of 1882, to the north-east coast of Greenland. It is hoped that the explorers may reach a higher latitude than that attained by Lieutenant Holm in 1884. The expedition will be commanded by Lieutenant Hovgaard, who in 1882 commanded the *Dijmphna*.

It will be remembered that Holm made a successful exploration of the east coast as far as latitude $66^{\circ} 20'$ north in 1884 and 1885. He started from the west coast in several Eskimo boats, and, by the help of the natives, reached the fiord of Angmagsalik. His observations on the ice phenomena of this coast show that the sea is probably navigable during a great part of the year. There is little or no ice close to the coast in the autumn and during the early part of winter. In January and February heavy masses of ice lie close to the shore, and remain there until late in spring. In June or July they begin to disappear. From these observations, it appears that the coast can be reached by vessels late in the season, and the new expedition will probably make use of this experience. It is a remarkable fact that in arctic America those places are most easily approached where the coast makes a slight outward turn, while concave bends of the coast are always difficult to approach. The east coast of Greenland was reached by Scoresby near Scoresby Sound, and by Nordenskjöld at Cape Dan. At both points the coast makes a turn. South of Cape Dan we find a slight concave bend, which is always filled with closely packed ice. The same fact may be observed in Baffin Bay and Davis Strait. The bay of Julianehaab is always full of ice, and the land cannot be reached here, while farther north there

is only loose ice under the coast. The west ice of Baffin Bay can be crossed most easily near Cape Walsingham and Cape Kater, — the middle water of the whalers. This phenomenon is easily accounted for: on the straight or concave coast the ice is pressed against the land, while on the points there is room for it to spread out. There are many questions of great interest to be solved on this coast, — the extent of the inland ice, an; exploration of the enormous sounds of Scoresby Land and King William Land, and the northern limit of man. On his visit to East Greenland, Scoresby met Eskimos in latitude 70° north. The German expedition of 1869–70 found the ruins of their houses at the farthest point reached. Many facts make it probable that the Eskimos travelled around the north point of Greenland; and therefore a study of the most northern tribes of the east coast is of particular interest from an ethnological point of view, and for the decision on the feasibility of the exploration of the north coast of Greenland.

Polar regions.

According to the Proceedings of the Royal geographical society for May, Sir Allen Young, the well-known arctic explorer, has offered his services to the Australian colonies to lead an expedition to the antarctic regions. Acting on this offer, Sir Graham Berry has brought the question of a government grant towards the cost of the enterprise (stated to be \$40,000) before the cabinet, and the matter is being urged forward with a view to the vessel or vessels starting from Hobson's Bay in October or November next. The object of the expedition is to be entirely geographical, but incidentally much advantage is expected to accrue to the whaling and sealing interests, which would profit by the information gained. While thus an important further step has been taken to promote the Australian expedition, it seems that the reports on Nordenskjöld's plans were not well founded. It may be that he plans an expedition towards the south pole, but so far no funds are available for this purpose.

The season of arctic travels is also approaching. Mr. K. D. Nosilof, a Russian explorer, announces to the French geographical society (*Compt. rend.*, No. 7, 1887) his intention to visit Nova Zembla. Nosilof has spent three years in exploring the northern Ural to find a practicable route to Siberia. This was done at the expense of Mr. Sibirakof, who has given up his intention of establishing regular communication by sea between the Obi and Archangel. On his new expedition, Nosilof intends to make a detailed survey of the coasts and of the interior, and to study the

movements of the ice of the Kara Sea. Besides, he intends to study the natural history and ethnology of that district.

In America, Colonel Gilder is going to resume his work, which was interrupted last winter. He intends to return to Hudson Bay, and to start on his expedition north with the Eskimos of Wager River, with whom he became well acquainted at the time of Schwatka's sledge-journey to King William Land, of which he was a member. He hopes to be able to reach Iglulik, in Fury and Hecla Strait, in the spring of 1888, and Lancaster Sound in the summer or autumn of the same year.

NOTES AND NEWS.

THE department of agriculture has issued a paper prepared by Professor Riley, on the defoliation of shade-trees in Washington. The four principal leaf-eaters are the imported elm-leaf beetle, the bag-worm, the white marked tussock moth, and the fall web-worm. The beetle, Professor Riley says, has done much mischief in the old world. It was first imported here in 1837, and its earlier destructive attacks were notably about Baltimore and New Jersey. The bag-worm for two or three years has been on the increase in special localities in Washington. Speaking of the enemies of these worms, he says, "The 'pellets' of a screech-owl found in the vicinity of Baltimore consisted apparently almost entirely of the hairs of these caterpillars, proving that this useful bird has done good service. Perhaps the statement may be of interest that this little owl is getting much more common in the vicinity of cities in which the English sparrow has become numerous, and that the imported birds will find in this owl as bold an enemy as the sparrow-hawk is to them in Europe, and even more dangerous, since its attacks are made toward dusk, at a time when the sparrow has retired for the night, and is not as wide awake for ways and means to escape. If our two cuckoos, the black-billed and yellow-billed species, could be induced to build their nests within the city limits or in our parks, we should gain in them two very useful friends, since they feed upon hairy caterpillars." Speaking of a remedy for these pests, Professor Riley says, "It so happens, fortunately, that there is one thoroughly simple, cheap, and efficacious remedy applicable to all four of these tree-depredators. They all begin their work very much at the same season, or as soon as the leaves are fairly developed; and arsenical mixtures properly sprayed on the trees about the middle of May, and repeated once or twice at intervals of a fort-

night later in the season, will prove an effectual protection to trees of all kinds."

— A committee of the Association of German physicians has sent a circular to the directors of all the gymnasia of Germany, asking them to dissuade students from adopting the medical profession. Accompanying the circular are statistics which show the proportion between the number of physicians licensed each year and the number who die or retire from the profession.

— A second edition of Lancaster's '*Liste des observatoires et des astronomes*' has appeared. We are glad to learn that there is a prospect of further editions being published, as they may be required to keep pace with the movements of astronomers. This little directory will be found useful not only by astronomers, but by booksellers and others who may wish to be put in communication with the astronomical world. The index contains about a thousand names.

— Trübner & Co. announce the first volume of the '*Reports of the Archeological survey of southern India, the Amarâvatî and Jaggayyapeta Buddhist Stûpas*,' by James Burgess, director-general of the Archeological survey of India; together with transcriptions, translations, and elucidations of the Dhauli and Jaugada inscriptions of Asoka, by Prof. G. Buhler, Vienna. Dr. Burgess, the director-general of the Archeological survey of India, is just finishing a volume on the Amarâvatî and Jaggayyapeta Stûpas, illustrated by more than fifty collotype and lithographic plates and numerous woodcuts. It will be remembered that the second part of the late Mr. James Fergusson's '*Tree and serpent worship*' (now out of print) dealt with the marble sculptures brought by Col. C. Mackenzie and Sir Walter Elliot at different times from the Amarâvatî Tope or Stûpa, and which are now in the British museum. Dr. Burgess spent some time at Amarâvatî immediately after the excavation of the site by orders of the Madras government, where he made further researches, discovering about ninety fresh sculptures, and forwarded about a hundred and eighty slabs to the Madras government museum, which he also carefully photographed. On the spot he made many drawings, and copied all the Pali inscriptions, which are numerous, and, though short, are of considerable interest. One in particular he discovered, bearing the name of Pulumâyî, one of the great Andhra sovereigns of the second century, which is of the utmost value in determining the age of the Tope. The date of the monument proves to be earlier by about a century and a half than Mr. Fergusson had estimated it; but this seems to be solely due to the