

not found to pay commercially, although peat charcoal is well adapted for working and tempering iron for the finer kinds of cutlery. The Irish Peat Company erected extensive plant for drying and distilling the peat and producing tar, illuminating oil and paraffin. At these works, one ton of peat yielded 10 gallons of tar, or 28 lbs. of illuminating oil and 1 lb. of paraffin.

One of the last volumes of the *Encyclopédie Scientifique*, published in Paris,<sup>1</sup> is devoted to a treatise on peat and peat bogs. It describes the conditions under which peat was originally formed, the plants of which it is composed, the chemical analysis of its constituents, the principal bogs in Europe, the age of peat as deduced from the remains of animals, flint implements and tools found buried in it, the methods of obtaining and preparing peat for commercial purposes, the uses to which it is applied and its calorific value and antiseptic qualities.

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THE BRITISH AND GERMAN ANTARCTIC SHIPS.

THE two great Antarctic expeditions have made a stride towards completeness by the launch at Dundee and Kiel of the exploring ships *Discovery* and *Gauss*, both vessels built, at great expense, specially for service in the Antarctic ice. No complete official announcement of the organisation and programme of either expedition has yet been made. However, the two ships are afloat, and appear to be the finest vessels for ice-navigation ever constructed, not even excepting the *Fram*, which of course was planned for drifting with the ice-floes, not for sailing through them.

The following table compares the chief dimensions of the two vessels, so far as we have been able to ascertain them :—

	<i>Discovery.</i>	<i>Gauss.</i>
Length over all ... (feet) ...	—	168
" at water line ... ..	172	—
" between perpendiculars ... ..	—	151
Extreme Breadth ... ..	34	35
Probable displacement fully loaded (tons)	1750	1450
Horse-power ... ..	450	300-500
Rig ... ..	Barque	Barquentine
Complement all told (souls) ... ..	46	28

It is stated the name of *Gauss* was given to the German vessel by the Emperor to emphasise the scientific character of her mission by associating it with the memory of the great authority on terrestrial magnetism.

The German vessel, although a little smaller than the *Discovery*, is intended to carry so much smaller a crew that she will probably prove to be no more crowded with her stores and equipment. Both vessels are strongly built of oak and sheathed in greenheart. The *Discovery*, like the *Fram*, has her frames in contact throughout her whole length, and the joints caulked so that even if all her triple skin of planking were stripped from her the vessel would still be watertight and seaworthy. She is of whaler pattern to the extent that her sides are not pierced by any openings, the only daylight for the cabins coming from deck-lights; but the cabins, though dark and uninviting at the launch, are exceptionally roomy and well-planned, and when lighted by the electric light will be extremely comfortable. The *Gauss* is also to be furnished with the vital necessity of electric light, a boon that none but polar voyagers can fully appreciate, and she is, in addition, to have the luxury of steam-pipes for heating purposes throughout the whole inhabited part of the ship; the *Discovery* will probably be heated by stoves.

Both vessels are provided with wells and gear for

hoisting out both rudder and propeller, and a spare rudder will be carried which can be shipped securely and speedily if the original steering gear should be seriously damaged. The bows of both ships are heavily plated with steel to enable them to cut through or break comparatively thin ice; but the form of the stem is different. Both have a great sheer, so that the vessel would tend to ride up on any floating ice she encountered and break it with her weight, but the stem of the British ship is a straight line forming an obtuse angle with the keel, while that of the German vessel is a convex curve. The sterns also differ, that of the British vessel having a much longer overhanging counter than the *Gauss*, so that her length over all is probably from 15 to 20 feet greater.

The details of laboratory accommodation can be more profitably described when the space is finally apportioned and the equipment in place; but the magnetic observatory on the *Discovery* has been very carefully planned so that it shall be more than 30 feet from any iron or steel—even the bolts and nails in its vicinity are all of brass.

The living rooms in both vessels are amidships, the stokehold and engine-room being placed right aft, while the whole lower hold is utilised as a great coal-bunker along the length of the ship. The *Discovery* is rigged as a barque; the rig of the *Gauss* is officially described as that of a "three masted schooner," but her published sail-plan shows the foremast completely square-rigged, the main and mizzen having only fore-and-aft sails, so that she is better called a barquentine. We believe that this rig, rendered necessary probably on account of the small crew carried, is not a usual one for polar ships. Machinery and masts are now being rapidly put in place, and the *Discovery* may be expected in the Thames to take her stores on board about the end of May or early in June.

MEETING OF THE INTERNATIONAL ASSOCIATION OF ACADEMIES.

THE business of the Paris meeting of the International Association of Academies was commenced on Tuesday morning, when the delegates assembled at the Institute. The delegates were received, on Saturday, by the president; and the French Government, as well as the Municipal Authorities, have combined with the Institute to make the meeting a success by facilitating all the arrangements and providing lavish entertainment. By this official action, the dignity and importance of the meeting are declared, and the delegates are made to feel that they are welcome visitors.

Tuesday's meeting was devoted to preparatory business, and M. Darboux gave an address on the objects and work of the Association. The financial position was considered, and suggested additions and alterations of the rules were discussed. A committee was appointed to consider a scheme for the mutual loan of manuscripts. In the evening, the president of the Institute, Count de Franqueville, gave a reception to the delegates and their families at his residence, the Château de la Muette. Yesterday the arrangements included a visit to the Château of Chantilly, bequeathed to the Institute by the Duc d'Aumale. This afternoon there will be a reception by M. Emile Faguet at the French Academy, and in the evening a dinner will be given by the Institute. On Saturday afternoon a visit will be made to the National Library, under the direction of M. Léopold Delisle, and on Saturday evening the Municipal Council will give a dinner to the delegates and members of the Institute. The dinner will be followed by a reception and concert, to which the families of the guests are invited. On Sunday a special piece will be represented at the Comédie-Française in honour of the delegates.

From this programme it will be seen that the serious

<sup>1</sup> "La Tourbe et Les Tourbières, par Alb Larbalétrier. Encyclopédie scientifique des Aide Memoire." (Paris: Masson et Cie.)