the external aspects of scientific activity. Superficially it might seem that science has lost something of its interest for the mass of the nation by the disappearance of the rather heated controversies in which men of science took part a generation or two ago. We have, for example, no controversialist like Huxley to arrest attention by a lively polemic connecting science with cherished beliefs in another sphere. But that is really evidence that science is better and more widely understood by the mass of the nation than it was in his day, and perhaps also that men of science themselves have advanced beyond a standpoint from which such a polemic appeared useful. It may even be noted that scientific thought is less concerned than it was with abstract disputation, and applies itself much more closely to more positive and practical lines of inquiry. The note of the present day is the enormous extension of applied science, and the danger is that the minute specialization such extension involves may militate against the appearance of one of the commanding intellects that from time to time have opened up a new world. It seems to some observers that some great step in advance is due for the whole scientific army, as distinguished from the mass of excellent detailed work now done upon existing lines. We have as it were a great scientific community working out the exploration of a region long ago discovered and surveyed, but there is room for some one who shall climb to the top of Pisgah, and announce to us a new land of promise which man may enter and possess. As we can not feed upon the crude elements that build up our bodies, but must depend upon plants as intermediaries, so in our manifold and voracious activities we are using up intermediate products of natural forces, the store of which is not inexhaustible, but we have not learned how to harness the natural forces themselves for our purposes—the energy of the sun, the power of the tides, and the yet unpenetrated processes by which nature, in the quietest manner, achieves results only imitated in our laboratories by enormous expenditure of stored-up energy.—London *Times*.

SCIENTIFIC BOOKS

The Voyage of the "Why Not?" in the Antarctic. The Journal of the Second French South Polar Expedition, 1908–10. By Dr. Jean Charcot. English version by Philip Walsh. Illustrated. 4to, pp. viii + 315. New York, Hodder and Stoughton.

This expedition, the second made by Dr. Charcot to the Antarctic, was not a south-polar quest, but was for scientific exploration. Fitted out by the French government at an expense of $140,000, it was aided by various subscriptions to the extent of $20,000 in money. Additional gifts and loans from learned institutions made "the scientific arsenal one of the richest and completest ever carried by a polar expedition."

> The exact object of the expedition was to study in detail, and from all points of view, as wide a stretch as possible of the Antarctic in this sector of the circle, regardless of latitude. I knew that I had chosen the region (south of Cape Horn) where ice confronts the navigator as far north as 61°, and where the coastline is fringed with high mountains, to all appearance insurmountable.

One phase connected with the expedition was unusual, illustrative as it was of that generous spirit of cooperation in scientific investigations, which to-day causes all civilized nations to interest themselves in ventures of general welfare. It was natural that French generosity should be manifest in donations for an expedition of its own government, but that other nationalities should tender material and important aid was as gratifying as it is unusual. Mr. Gordon Bennet with customary generosity filled the bunkers of the *Why Not?* at Madeira. The Prince of Monaco gave a complete oceanographical outfit. The meteorological department of the Argentine Republic loaned scientific instruments. Chili contributed seventy tons of coal. Brazil not only gave one hundred tons of coal on the outward passage, but also filled the bunkers on the return, both at Rio and at Pernambuco.

The admirable manner in which the ship did her work was due to the care, foresight and judgment exercised in planning and in building the *Why Not?*. The general equip-

ment and arrangements for scientific work were equally satisfactory, but the canned provisions either from character or from quality were unsuited to prevent scurvy. Nine of the twenty-nine members of the personnel were polar veterans, whose services were entirely satisfactory—producing a maximum of possible results.

Leaving Havre, August 15, 1908, the *Why Not?* sailed *via* Rio and Buenos Aires—in which cities great interest was shown and material aid given—to Punta Arenas, whence she departed on December 16. At Port Deception, South Shetlands, was found a steam-fleet—engaged in the renewed whaling enterprizes—from which Charcot obtained his last coal.

Favored by fine weather the *Why Not?* skirted the west coasts of Palmer and Graham Lands, making many discoveries and reaching Alexander Land. Obliged to return for winter quarters to Peterman Island, the ship grounded en route and barely escaped destruction.

After eight months in winter-quarters Charcot was able to break out, and obtaining coal at South Shetlands—to renew his explorations to the south in the summer of 1909–1910, when his success was phenomenal.

In the two summer voyages he extended this part of the continent of Antarctica from the Antarctic circle to 70° S., surveying Loubet coast, discovering and mapping Fallières Land, extending Adelaide Island from an islet to a land seventy miles long, opening Marguerite Bay, surveying Alexander I. Land, and finally discovering Charcot Land in 77° W., 70° S., a mountainous, almost ice-covered region—doubtless a part of the continent.

Keeping to the west the *Why Not?* traversed unknown areas, along the parallel of 70° S., from 103° W. to 124° W. (except on the 107th meridian where Cook passed); in latitudes from two to three hundred miles to the south of Charcot's predecessors—he sounding as he sailed.

The second voyage was made under conditions of great peril, for a survey of the *Why Not?* by a diver at South Shetlands disclosed that "The whole stem below water-line was torn away, as well as several meters of the keel: the slightest shock might send the ship to the bottom." The diver remonstrated, yet Charcot sailed.

This being a popular volume, it does not give the results of the immense amount of scientific work done, including observations on gravity, seismology, meteorology, geology, tides, magnetism, zoology and oceanography. Many attractive sidelights are, however, thrown on these subjects by the notes made from day to day. A spirit of French gaiety and good humor pervades the book, and these qualities were evidently characteristic of the party as a whole.

The generous spirit shown by Dr. Charcot in giving due credit to his predecessors adds much to the enjoyment of his narrative. Such action is in striking contrast to the unfortunate tendency of some explorers of smaller mind to mar the value of their own exploits through neglect or by disparagement of the work of others, whether associates or rivals. Especially grateful to Americans are the credits given and justice done to Palmer and Pendleton.

The volume is most creditable to the publishers, and the translation good. The illustrations are excellent, but the south-polar chart should have been on a larger scale, with side maps, and its text should have been in English. The volume will interest all readers fond of travel and exploration.

A. W. GREELY

Stereoscopisches Sehen und Messen. By von CARL PULLFRICH. Jena: Gustav Fischer, 1911. Pp. 40.

This useful pamphlet, so far as the text is concerned, is available in English as the article on the "Stereoscope" in the eleventh edition of the Encyclopedia Britannica. The pamphlet contains some supplementary statements; but its notable addition is a bibliography of 276 numbers covering the period 1900–1911. This in turn supplements the bibliography available in M. von Rohr: "Die