

It is by way of Smith Sound, however, that navigation has hitherto been pushed furthest, and here an English expedition, so long projected, may well operate. At the same time the east coast of Greenland seems still worthy of attention. The second German expedition did not proceed far to the north, it is true, but it was easy enough to reach the coast, and Lieut. Payer told me this was merely something like a "cab drive." Capt. Gray, of Peterhead, a most experienced arctic navigator, wrote already in 1868 thus:—"Having for many years pursued the whale fishery on the east coast of Greenland, and observed the sides, the set of currents, and the state of the ice in that locality at various seasons of the year, I think that little if any difficulty would be experienced in carrying a vessel in a single season to a very high latitude, if not to the pole itself, by taking the ice at about the latitude of 75°, where generally exists a deep bight, sometimes running in a north-west direction upwards of 100 miles towards Shannon Island, from thence following the continent of Greenland as long as it was found to sound in the desired direction, and afterwards pushing northwards through the loose fields of ice which I shall show may be expected to be found in that locality. The following are the reasons on which that opinion is founded:—In prosecuting the whale fishery in the vicinity of Shannon Island there are generally found loose fields of ice, with a considerable amount of open water, and a dark water sky along the land to the northward; the land water sometimes extending for at least fifty miles to the eastward; and, in seasons when south-west winds prevail, the ice opens up very fast from the land in that latitude. The ice on the east coast of Greenland is what is termed field or floe ice, the extent of which varies with the nature of the season; but it is always in motion, even in winter, as is proved by the fact that ships beset as far north as 78° have driven down during the autumn and winter as far south as Cape Farewell. Thus there is always the means of pushing to the northward by keeping to the land ice, and watching favourable openings."

And quite recently, in communicating the result of his experience the present year, he writes:—"During the past season I had too many opportunities of observing the drift of the ice. In May, June, July, and August, its average drift was fully fourteen miles a day; in March and April it must have been driving double that rate. I calculate that nearly the whole of the ice was driven out of the arctic basin last summer. I went north to 79° 45' in August, and found the ice all broken up, whereas down in 77° the floes were lying whole in the sea, clearly showing that the ice in 80° must have been broken up by a swell from the north, beyond the pack to the north, which I could see over; there was a dark water sky reaching north until lost in the distance, without a particle of ice to be seen in it. I was convinced at the time, and so was my brother, that we could have gone up the pole, or at any rate far beyond where anyone had ever been before. I bitterly repeat that I did not sacrifice my chance of finding whale and make the attempt, although my coals and provisions were wearing down. Although I have never advocated an attempt being made to reach the pole by Spitzbergen, knowing well the difficulties that would have to be encountered, my ideas are now changed from what I saw last voyage. I am now convinced that a great advance towards the pole could occasionally be made without much trouble or risk by Spitzbergen, and some of our amateur navigators will be sure to do it and pluck the honour from the Royal Navy. I do not know if the *Eclipse* will be sent to the Greenland whale fishery next year; if I go I shall be able to satisfy myself more thoroughly as to the clearing out of the ice this year, because it will necessarily be of a much lighter character than usual."

If this important information should be considered worthy the attention of the British geographers and the Admiralty, there would, perhaps, be two steamers sent out to make success doubly certain, one to proceed up the west coast of Greenland by way of Smith Sound, the other up the east coast of Greenland.

But whatever may be decided on, I trust that the British Government will no longer hold back to grant what all geographers and all scientific corporations of England have been begging for these ten long years, and afford the means for a new effective expedition to crown these, our modest endeavours, of which I have given an outline. We in Germany and Austria have done our duty, and I am happy to have lived to see that our humble endeavours, the work of our arctic explorers, have

gained your approbation—that of the Royal Geographical Society of Great Britain. We have done all we could in the private manner we had to do it; for, as a nation, we Germans are only now beginning to turn our attention to nautical matters. We have had no vessels, no means, and our Government has had to fight three great wars these ten years. But, nevertheless, we have had in this interval German, Austrian, American, Swedish, Norwegian, Russian polar expeditions, of which even an Italian officer took part at the instance of the Italian Government. And England, formerly always taking the lead in these matters, is almost the only maritime power that has kept aloof. When, nearly thirty years ago, one man of science proposed that magnetical observations should be extended, it was at once answered by the Government then by sending out to the antarctic regions an expedition of two vessels, the *Erabus* and *Terror*, under that great navigator, Sir James Clarke Ross, which has never yet been eclipsed as to the importance of its results and the lustre it shed on the British Navy. I do not know the views held in England now, but I know that to us outsiders the achievements and work of a man like Sir James Clarke Ross or Livingstone has done more for the prestige of Great Britain than a march to Coomassie, that cost nine millions of pounds sterling. That great explorer, Livingstone, is no more; his work is going to be continued and finished by German and American explorers; we shall also certainly not let the arctic work rest till it is fully accomplished, but it surely behoves Great Britain now to step in and once more to take the lead.

AUGUSTUS PETERMANN,

Hon. Cor. Member and Gold Medallist,
Royal Geographical Society,
Gotha, Nov. 7, 1874

SOCIETIES AND ACADEMIES

LONDON

Chemical Society, Nov. 4.—Dr. Odling, president, in the chair.—The following papers were read:—On methyl-hexyl-carbinol, by Dr. C. Schorlemmer; On the action of organic acids and their anhydrides on the natural alkaloids, Part I., by Dr. C. R. A. Wright; On the action of bromine in the presence of water on bromopyrogallol and on bromopyrocatechin, by Dr. J. Stenhouse; The action of baryta on oil of cloves, by Prof. A. H. Church; Observations on the use of permanganate of potash in volumetric analysis, and on the estimation of iron in iron ores, by Mr. E. A. Parnell; Further researches on bilirubin and its compounds, by Dr. J. L. W. Thudichum.

Zoological Society, Nov. 3.—Dr. A. Günther, F.R.S., vice-president, in the chair.—The secretary read a report on the additions that had been made in the Society's menagerie during the months of June, July, August, and September, 1874.—Mr. Selater gave an account of some visits he had recently made to several zoological gardens and museums in France and Italy, and made remarks upon some of the principal objects noticed therein.—Mr. G. Dawson Rowley exhibited and made remarks upon some rare birds from New Zealand, amongst which were fine examples of *Apteryx haasti*, and a living pair of *Sceloglaux albigacies*.—Mr. A. R. Wallace exhibited some rhinoceros horns obtained in Borneo by Mr. Everett, proving that this animal was still found living in that island.—Mr. J. Gould exhibited a new parrot, of the genus *Aprosmictus*, recently obtained on the Darling Downs, in Queensland. Mr. Gould proposed to call this bird *Aprosmictus insignissimus*.—A letter from Mr. Swinhoe was read respecting some bats obtained by him at Ningpo.—A communication was read from M. L. Taczanowski, conservator of the museum at Warsaw, in which he gave a list of the birds collected by M. Constantine Jelski in the central part of Western Peru. Amongst these were eighteen species described as new to science.—A communication was read from Mr. Frederick Moore, giving descriptions of some new Asiatic Lepidoptera.—A communication was read from Mr. George Gulliver, containing measurements of the red corpuscles of the blood of *Hippopotamus amphibius*, *Olaria jubata*, and *Trichecus rosmanus*.—Mr. R. Bowdler Sharpe read a paper entitled "Contributions to a history of the Accipitres, or birds of prey." The first of this series contained notes on the females of the common and South African kestrels.—A communication was read from Mr. Henry Adams, giving the descriptions of some new species of shells from various localities, also of a new genus of Bivalves from Mauritius.—Mr. A. H. Garrod read a paper on points in the anatomy of the parrots which bear on the classification of the sub-order. This

* Proc. R. G. S., vol. xii. p. 197

† Letter of Capt. David Gray to Mr. Leigh Smith, dated Peterhead, Sept. 21, 1874.

memoir was based upon the examination of a large number of individuals belonging to seventy-nine species, chiefly from the Society's living collection, and contained a new arrangement of the group based principally upon the arrangement of the carotid arteries, and the presence or absence of the *ambians* muscle, the furcula, and the oil-gland.—A communication was read from Mr. G. B. Sowerby, jun., giving the descriptions of five new species of shells from different localities.—A communication was read from Mr. E. P. Ramsay, wherein he described five new species of Australian birds, and of the egg of *Chanydodera maculata*. The birds described were—*Cypselus terra-regine*, *Alurædus maculosus*, *Ptilotis frenata*, *Eopsaltria inornata*, and *Rhipidura superciliosa*.

Royal Microscopical Society, Nov. 4.—Chas. Brooke, F.R.S., president, in the chair.—A paper by Dr. Jas. Fleming, On microscopical leaf-fungi from the Himalayas, was taken as read; it was illustrated by drawings, and many of the species described had been identified by Mr. M. C. Cooke as being the same as those known in Europe.—A paper by the Rev. W. H. Dallinger and Dr. Drysdale, in continuance of their series. On the life history of Monads, was read by the secretary. It minutely described a form repeatedly met with in macerations of the heads of codfish and salmon, and traced the development and reproduction in all stages, and was illustrated by drawings, which were enlarged upon the black board by Mr. Chas. Stewart. The observations had extended over several years, and had been conducted with the greatest care under various powers up to $\frac{1}{15}$ in. The results of experiments were also given, and conclusively showed that exposure to temperatures of 220° and 300° F. had failed to destroy the germs of these organisms. Some interesting living objects, stated to be larval forms of the common cockle, were exhibited and described by Mr. Wood; but the similarity of these forms to some which were exhibited at the previous meeting, and presumed to be *Buccaphalus polymorphus*, having been pointed out by Mr. Stewart, an interesting discussion followed. *Perryia pulcherima*, Kitton, was exhibited under one of the Society's instruments.

PARIS

Academy of Sciences, Oct. 26.—M. Bertrand in the chair.—The following papers were read:—Note on Dr. Zenker's cometary theory, by M. Faye. The theory commented upon supposes that comets owe their movements in part to the attractive force of the sun and in part to the evolution of gases from the surface of the comet by the action of the sun's heat. The gases are supposed to consist of water vapour, and a hydrocarbon, and the motion produced by their rapid generation from the surface of the comet nearest to the sun is regarded as of an opposite nature to that produced by gravitation. M. Faye dissents from these views, and promises a further examination of the question in a future paper.—Note on the average ration of the French countryman, by M. Hervé Mangon. The author concludes, from a statistical inquiry into the subject, that the daily ration of the French labourer is not sufficiently high, and that for the welfare of the country this ration should be increased.—On the composition and physical properties of the products from coal-tar, by M. Dumas. The analyses and experiments were undertaken by the author with a view to test the insecticidal properties of coal-tar as applied to the destruction of Phylloxera. The hydrocarbons appear to have the most energetic action, the portion boiling below 110° causing death in five minutes.—Presentation of the geographical programme forming part of the new plan of studies for the colleges, by M. E. Levasseur.—On the analytical theory of Jupiter's satellites, by M. Souillart. The author had given, in a previous memoir, the formulæ for calculating the inequalities of longitude and of the *radial vectors* of the satellites. In the present memoir the problem has been solved for the latitudes and the secular equations of the longitudes.—Eighth note on the electric conductivity of bodies which are imperfect conductors, by M. Th. du Moncel.—On the fermentation of apples and pears, by MM. G. Lechartier and F. Bellamy. The experiments described have been carried on since 1872, and are considered by the authors as a veritable demonstration of Pasteur's deduction from his theory of fermentation, that "the formation of alcohol is due to the fact that the chemical and physical life of the fruit-cells is continued under new conditions in a similar manner to those of the cells of the ferment."—Absorption of gas by iron wire heated to redness and thinned by immersion in dilute sulphuric acid during the operations of wire-drawing, by M. D. Sévoz. The author has not yet determined the nature of this

gas.—On the isomerism of acetylene perbromide and the hydride of tetrabrominated ethylene, by M. E. Bourgoin. The last-named substance is obtained by the action of bromine and water on bibromsuccinic acid, and is described as a crystalline substance melting at 54.5°. Perbromide of acetylene is a liquid formed when acetylene is passed into bromine heated to 50° under a layer of water. The author considers acetylene perbromide to be an additive compound of the acetylene series, while the other substance is derived by substitution from ethylene or ethyl hydride.—Researches on the decomposition of certain salts by water; second note, by M. A. Ditte. The author has now studied the decomposition bismuthous and bismuthic nitrates and of antimonious chloride.—On electro-magnets; a note by M. Deleuil. This paper refers to the use of electro instead of ordinary magnets for removing iron from the paste employed in the manufacture of porcelain.—Researches on the fleece of merino sheep, by M. A. Sanson.

Geographical Society, Oct. 21.—President, M. Delesse.—Dr. Hamy communicated the result of his researches on the geographical distribution of the human race in Eastern Melanesia. He showed that the penetration of the Papuan populations by the Polynesians is much less exceptional than has been hitherto believed. It has been long known that there has been a considerable immigration of Tongans into Viti. Ouvea, in the Loyalty Islands, was invaded at the beginning of this century by Kanakes from the Wallis Isles, the eastern coast of New Caledonia containing a very large number of Melano-Polynesian Metis, the yellow variety of M. Bougarel, who perhaps found them on Isabella Island, in the Solomon group. The recent discoveries of Captain Moresby show the Polynesians strongly established in the southern extremity of New Guinea. According to M. J. Verreau they had penetrated as far as Australia, where a small tribe having all the characteristics of Polynesians has been established for about thirty years in the neighbourhood of Cape Capricorn.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—Tables for Travellers: Admiral Bethune (W. Blackwood).—Out of Doors: Rev. J. G. Wood, M.A., F.L.S. (Longmans).—Charts of Meteorological Data (Meteorological Office).—Remarks on Charts of Meteorological Data (Meteorological Office).—Insects Abroad: Rev. J. G. Wood, M.A., F.L.S. (Longmans).—The Races of Mankind, vol. ii.: Robert Brown, M.A. (Cassell, Petter, and Co.).—The Earth as Modified by Human Action: G. P. Marsh (Sampson Low and Co.).—The German Arctic Expedition of 1873-74: Capt. Koldey (Sampson Low and Co.).—The Sheep: W. C. Spooner, M.R.V.C. (Lockwood and Co.).—A Year's Botany: Frances Anna Kitchner (Rivingtons).—The Safe Use of Steam. By an Engineer (Lockwood and Co.).—Observations of Magnetic Declination: J. A. Brown, F.R.S. (H. S. King and Co.).—The Elements of Psychology: Robert Jardine (Macmillan and Co.).—Winter and Spring on the Shores of the Mediterranean: James H. Bennett (J. and A. Churchill).—Physiological Chemistry: S. W. Moore (Smith, Elder, and Co.).—Philosophy of History: Hugh Doherty, M.D. (Fisher and Co.).

AMERICAN.—Proceedings of the Boston Society of Natural History, vol. xvi. Part IV.—Memoirs of the Boston Society of Natural History, vol. ii. No. 1.—Address of Ex-President Joseph Lovering, American Institute for the Advancement of Science at Hartford.

CONTENTS

	PAGE
SIR JOHN LUBBOCK AT BIRMINGHAM	21
THE NATURAL HISTORY OF SPITZBERGEN AND NOVA ZEMBLA	22
HECKEL'S DEVELOPMENT OF MAN, II. By Dr. PYE-SMITH	22
ISMAILIA (With Illustration)	24
LETTERS TO THE EDITOR:—	
Endowment of Research.—GEORGE DARWIN	27
The University of London.—PHILIP MAGNES	27
Gresham Lectures.—MAURICE LICHTENSTEIN	28
Insects and Colour in Flowers.—F. T. NOTT: JOSEPH JOHN MURPHY	28
Locomotion of Medusidae.—GEORGE J. ROMANES	29
Suicide of a Scorpion.—G. BIDDE	29
THE AMU EXPEDITION (With Illustrations)	29
MEMORIAL TO JEREMIAH HORROCKS	31
FERTILISATION OF FLOWERS BY INSECTS, VII. By Dr. HERMANN MULLER	32
THE CHEMISTRY OF CREMATION	33
A NEW MATERIAL FOR PAPER	33
NOTES	34
THE EXPLORATION OF THE ARCTIC REGIONS. By Dr. PETERMANN	37
SOCIETIES AND ACADEMIES	39
BOOKS AND PAMPHLETS RECEIVED	40