and nations, movements of population and colonisation, products and means of communication, methods of teaching and general works. These, however, only account for 239 titles; by far the greater part being classed under the continents. Europe is apparently the subject of the greatest amount of geographical work (the entries refer to maps and statistics as well as to written memoirs), Africa comes next, and all the rest of the world is dismissed in the same space as was required for Europe alone. This is perhaps the result of being somewhat more exhaustive in treating the countries of the predominant continent.

The bibliography is well planned, executed with praiseworthy impartiality; but for the language in which it is written it might, so far as a reader can detect, have been compiled in any capital of Europe or America, and considering the keenness of national spirit in many of the articles classified, this is high praise indeed.

Animals at Work and Play; their Activities and Emotions. By C. J. Cornish. With illustrations. Pp. 323. (London: Seeley and Co., Ltd., 1896.)

In a previous little volume Mr. Cornish gave an account of life at the "Zoo," in which he called attention to the tastes and preferences of animals for colour, music, and perfumes. In this volume he deals, for the most part, with some of the general activities and emotions of the every-day life of some mammals and birds. Most of the papers, here collected into a well-illustrated and pleasantly-written volume, have appeared from time to time in the columns of the *Spectator*. They cannot be said to contain much that is new, but many of the facts recorded are placed in a new light. There is a wealth of apt quotation, and, without aiming at technical description, the main facts are well put.

To give the reader an idea of what he may find in this work, we may refer to the chapters on "Animals' beds." More might have been made of this subject; for, without venturing on the somewhat mythical subject of the beds said to be built by the anthropoid apes, the beautiful nests of the field-mouse might, with others omitted, have been alluded to. The "Emotion of grief in animals" is another subject admitting of an expanded treatment; indeed, though the chapters are, from the point of view of a weekly journal, all that could be expected, yet in their new form, and remembering the interest of their themes, most of them might most advantageously have been added to.

The full-page illustrations are good; those from a Japanese source, such as the one with the "social sparrows," are excellent.

Model Drawing and Shading from Casts. By T. C. Barfield. Pp. ix + 92. (London: Chapman and Hall, Ltd., 1896.)

IT is hardly possible to draw accurately what is seen without knowing why the group or scene being delineated presents the appearance it does. This book will give students a clear idea of the field of view, and, by acquiring from it a knowledge of the laws and limitations of vision, they will be able to make model drawings intelligently.

A Short Catechism of Chemistry. Part I. By A. J. Wilcox. Pp. 16. (London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd., 1896.)

THE worst way to teach science is by catechism, for it leads to belief in doctrines on the authority of the book, while experience and demonstration are neglected. For this reason, we think the compiler of these fifty questions and answers would have done chemical science better service if he had refrained from publishing them. The incorrectness of several of the definitions confirms us in this opinion.

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LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

The Austro-Hungarian Map of Franz Josef Land.

WITH reference to Prof. Copeland's letter in your last issue, I must say that I am inclined to believe that Austria Sound will eventually be found to be more or less as Payer originally laid it down. I am inclined to this belief because it seems to me almost impossible that the map of the very track he trod should show any great error. Of course, the longitude laid down may well be erroneous—considering the circumstances—and we may expect rectification of this.

But I am not disposed to pass over the description which Payer gave us of Zichy Land with so light a touch as Prof. Copeland. For, however unintentional his error may have been, there can be no doubt that Payer has misled Arctic geographers into supposing that Zichy Land was a large mass of land. And belief in this, derived solely, of course, from Payer's description, induced Jackson to make certain modifications in his equipment and plans, which are naturally unnecessary now that he has proved Payer's description of Zichy Land to be inaccurate.

For Payer wrote thus of Zichy Land in his "New Lands within the Arctic Circle," vol. ii. p. 206.

"My attention was directed chiefly to the southern parts of Zichy Land, which formed a vast mountainous region beyond Markham Sound. Half the horizon was bounded by cliffs and heights gleaming with snow. The conical shape of the mountains prevailed here also; the only exception was Richthofen Spitze, the loftiest summit, perhaps, we had seen in Franz Josef Land, which rose like a slender white pyramid to the height of about 5000 feet."

Now, as every one knows, Jackson has travelled north across the "vast mountainous region" of Zichy Land, and found that all the time he was marching on sea-ice. He camped where Richthofen Peak is marked in Payer's map, and he was *still on sea-ice*. Richthofen Peak consequently disappears; but Jackson, having robbed Richthofen of his peak, has given him a cape (700 feet high) which is very near the site of the vanished peak.

To put it briefly, in fact, Zichy Land turns out to be a chain of small islands, on the west of Austria Sound, and these islands are of no considerable height. Westward of the chain, Jackson has discovered another Austria Sound, but wider and more important, and this he has named "the British Channel"; while to the north of this channel he has discovered a sea which is open both in winter and summer, and which now owns the name of "Queen Victoria Sea." Zichy Land is, in fact, no longer existent as a "vast mountainous region," and in its place we find a few islands, a wide channel, and a permanently open sea. And these, of course, completely alter the complexion of Jackson's work—the first part of which is to explore and map the Franz Josef Land Archipelago.

No doubt, as far as I can gather, has ever been thrown upon Weyprecht's valuable work. Jackson has, of course, not gone near the locality where Weyprecht observed, and consequently the accuracy or inaccuracy of Weyprecht cannot and does not enter into Jackson's map. But, on the other hand, I do not doubt that my absent friend entertains the highest respect for him, seeing that he has given to a bay he has discovered in the west of the archipelago the name of Weyprecht Bay.

ARTHUR MONTEFIORE-BRICE.

157 Strand, London, W.C.

Tournefort and the Latitudinal and Altitudinal Distribution of Plants.

TOURNEFORT has generally had the credit of being the first to indicate a parallelism in the latitudinal and altitudinal distribution of plants; yet it would seem without sufficient ground. Linnaeus mentions ("Flora Lapponica," Proleg. n. 14) that certain plants grow on Mount Ararat as well as in Lapland. Later (in 1751), in his "Oratio de Tellure Habitabili" ("Amoenitates Academicæ," ii. p. 447) he distinctly connects Tournefort with latitudinal and altitudinal distribution of plants, and in such a way as to convey the impression that it was

Tournefort's idea. Here follows the paragraph:—"Memoratu dignissimum est, quod refert in Itinerario suo Orientali *Tournefortius*: reperisse se nimirum apud radices Ararati montis plantas illas quæ in Armenia erant vulgares: aliquantum progressus illas invenit, quas in Italia ante viderat: altius scandenti offerebantur Vegetabilia circa Lutetiam Parisiorum crescentia: Plantæ Suecicæ erant superiori loco positæ. Sed summum montis locum proxime ad culmen, nive obtectum, plantæ illæ occupant, quæ sunt alpinis Helveticis et Lapponicis domesticæ."

Humboldt, writing in 1816, "Sur les lois que l'on observe dans la distribution des formes végétales," p. 2, attributes the idea to Tournefort, and its development to Linnæus. Schouw ("Grundzüge einer allgemeinen Pflanzengeographie" (1823), p. 21), almost repeats Linnæus, but uses fewer and somewhat different geographical names. Edward Forbes ("Memoirs of the Geological Survey," i. p. 351) also attributes the idea to Tournefort; yet, as Sir Joseph Hooker states (*NATURE*, xxiv. p. 444), I also have been unable to find any such idea expressed in Tournefort's works. Indeed, his account of his ascent of Mount Ararat, as given in the English edition of his travels, and verified for me by Mr. Daydon Jackson as being essentially the same in the French edition, is about as weak and silly a piece of writing as one could well find, and quite unworthy of a man of his reputation. True, he mentions a few plants; but not a word on their distribution, except that some of them were common and familiar. No Alpine plant is included in his meagre list. Instead of being a sober narrative of the journey, it is an attempt to be serio-comic with witless allusions to Noah's ignorance of the French language, &c.; and how the travellers filled themselves with water before starting, because none was to be had on the mountain, and their inability to climb in consequence; how they descended on their backs by the hour, and when they were tired of that they turned over face downwards, and other equally senseless and improbable things. It is only fair to add, however, that Tournefort's travels were published after his death, and probably contain matter that he would have expunged.

So far, then, as the evidence goes as between Tournefort and Linnæus, the latter originated the idea, and on very slender materials, if taken from Tournefort, of parallelism in latitudinal and altitudinal distribution of plants. Considering, too, that Linnæus was born only a year before Tournefort's death, it is difficult to find any other explanation.

Kew.

W. BOTTING HEMSLEY.

The Work of Local Societies.

MAY we beg a small portion of your space to give publicity to the accompanying circular, which is being issued to all the local scientific societies in the United Kingdom? An abstract of Mr. Abbott's scheme was published in *NATURE* of October 29 (vol. liv. p. 636). A separate copy of the paper will be sent to the Secretary of any local society on application to the Secretary of the Corresponding Societies Committee, British Association, Burlington House.

To the Secretary of the Local Society.

SIR,—We are requested by the Corresponding Societies Committee to call your attention to a scheme drawn up by Mr. George Abbott (General Secretary of the South-Eastern Union of Scientific Societies), for promoting District Unions of Natural History Societies, a copy of which is enclosed. This scheme was discussed at the conference of delegates of the Corresponding Societies of the British Association, held at the Liverpool meeting of the Association last September, when the great advantages of federation were generally admitted, and some examples of it were explained. At a meeting of the Corresponding Societies Committee on October 29, the report of the conference of delegates was considered, and it was decided that, as the circumstances in which the local societies are placed are extremely varied, it is desirable that each society shall be asked its opinion on Mr. Abbott's scheme, and as to what kind of federation it considers to be the best. We have, therefore, to state that the Corresponding Societies Committee will be greatly obliged if your Society will be good enough to favour them with its views on the subject at any date not later than December 20, 1896.

We are, Sir, yours faithfully,

R. MELDOLA, *Chairman*,

T. V. HOLMES, *Secretary*,

Corresponding Societies Committee, British Association.

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Floating Mercury on Water.

IN your review of Dr. Hertz' works you mention his investigations into the question of the flotation of thin metal plates, in connection with which I may mention that I have made mercury float on water on a somewhat similar principle. A few drops of mercury, half an ounce of water, and a pinch of some red powder, red lead, red oxide or vermilion were put into a small cylindrical bottle and shaken. A few small globules of mercury were then found floating together at the centre of the water surface. The shaking was frequently repeated until a small dish consisting of a large number of mercury globules was formed, which floated on the water and at the centre of its surface. Its diameter would be about $\frac{3}{8}$ inch, and its depth about $\frac{1}{16}$ inch. It did not disappear if allowed to rest, and though it must have been broken up each time that the bottle was shaken, it always reformed. I am unable to say whether the mercury was pure or not, or whether an acid, alkali, or salt had been added to the water, for this little experiment was made many years ago.

Glasgow, November 9.

C. E. STROMEYER.

The Swallows.

I SAW martins, three or four stragglers at a time, hawking on our cliffs, on the 2nd, 3rd, and 7th of this month, and again a single bird in the gardens this morning.

May I suggest as to Lord Hobhouse's gatherings, that those which apparently returned were not the same birds, but new comers from the north. All our own sand-martins cleared out here in August.

By far the vastest, and I think the latest, great congregation I ever myself saw, was one October 12, at Wentworth House, Earl Fitzwilliam's Yorkshire seat. Almost every tree in the richly-wooded park was alive with their incalculable multitude. That was close upon 1850.

If, as has been recently said, temperature is the sole key to the times of migration, it seems strange that all our varieties of the swallow tribe should leave so much earlier in the south than in the north. This town being so recent, we have very few swallows or house-martins; but our swifts and sand-martins all disappeared this year in August.

Bournemouth, November 9.

HENRY CECIL.

AFRICAN RINDERPEST.

WITH reference to Prof. Koch's present mission, I would venture to observe that the German Government does not deserve the praise given in your last issue. The German Government, like our own, has been guilty of gross negligence in not studying the nature of the rinderpest in 1891 and in subsequent years, when it killed off the cattle and the wild game in the British and German possessions in East and Central Africa.

Up to the time that the epidemic reached the Zambesi, much might have been done, had the nature of the disease been then understood, to limit its progress from the South, while the German possessions in South-west Africa might have been further protected had steps been taken to avert its progress at the Kalahavi.

The attention of the British Government was, as you say, called to the danger in ample time, but it is doubtful if in Germany the danger was even realised. It is now too late for either the British Colonies, the South African Republic, or the Germans in the South-west to do anything to stop the progress of a scourge of the nature of which we are ignorant. Prof. Koch has been engaged by the Cape Government to investigate the nature of the disease, and in his hands we may be sure that this will be thoroughly done. The practical result may be to prevent the disease from being carried to Europe by means of hides, &c.; but it is too late to save South Africa, where all ordinary means of transport have been paralysed.

I have just received a letter from Major Lugard, C.B., who is now at Lake Nyami, not far from the German frontier, which may be of interest to some. Writing on September 3 from his camp, near the Botletle River, he