native life and temperament which is the special and most valuable characteristic of the Danish explorer's record. Moreover, Mr. Giles had to pass through much desert country, the description of which could have been invested with charm only by a writer of genius. The book, however, shows that he has the courage, resource, and spirit of enterprise which are absolutely essential to an explorer, and here and there his story is lighted up by what he has to say about the few well-watered and pleasant tracts of land through which he passed during his various journeys. His explorations were necessary links in the chain of Australian geographical research, and he has acted wisely in preparing a full and accurate account of them. The value of the work is considerably increased by maps and illustrations.

New Zealand for the Emigrant, Invalid, and Tourist.

By John Murray Moore, M.D. (London: Sampson Low and Co., 1890.)

DR. MOORE spent nine years in New Zealand, and not only enjoyed his stay, but derived from it renewed health and vigour. When, therefore, he began to set down the results of his observation and experience, he was in the right mood for the production of a genial and appreciative record; and his book ought to be of considerable service to each of the three classes mentioned on the title-page. The most original parts of the work are two chapters, in one of which he indicates the various climatic zones into which New Zealand as a health-resort is divisible, while in the other he presents a full account of the characters and therapeutic achievements of the principal thermal springs of the North Island. Both of these chapters will be read with interest by medical men, and by invalids who may feel disposed, as the author puts it in the rhetorical style he sometimes affects, to "fly on the wings of steam to the realm of the Southern Cross." He gives a good description of Auckland, "the Naples of New Zealand," and sets forth pleasantly and effectively the impressions produced upon him during excursions to the hot lakes and terraces, and to the west coast Sounds. An instructive chapter is devoted to the volcanic eruption of Mount Tarawera, and Dr. Moore offers much valuable information about self-government in New Zealand, and the settlement of the land; and about social life, public works and institutions, productions and industries. The volume includes several maps, in one of which are shown New Zealand's climatic zones.

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.]

A Key to the Royal Society Catalogue.

IN his anniversary address to the Royal Society, the President, referring to the great catalogue of scientific papers, used these words:—"The utility of the work would obviously be much increased if it could be furnished with some sort of key, enabling persons to find what had been written on particular subjects. I am not without hopes that this very desirable object may yet be accomplished, notwithstanding the magnitude of any such undertaking." Almost everyone engaged in scientific research must have felt the want of such a key, and will join in the President's hopes. My present object is to suggest a scheme for supplying the want at comparatively little trouble and expense.

A complete subject index, arranged in alphabetical order, would indeed be a great undertaking. The subdivisions being minute, most of the papers would have to be catalogued more than once, and, even if the references were only to the name of the author and the number of the paper in the present catalogue,

the new catalogue would probably be as large as the old. The key that I suggest would be much smaller, and yet in many cases more convenient. The proposal can hardly be novel, but its advantages may not have been fully realized. Divide up the whole of science into some 5000 heads, classified in their natural order under the various branches—pure mathematics, astronomy, physics, chemistry, &c. Under each head place the names of the writers who have treated of the subject, with the dates of their earliest and latest papers thereon. If the heads are skilfully selected it will seldom be necessary to classify a paper under more than one head.

Some idea of the size of the suggested work may be gained from the following considerations. In the eight volumes of the catalogue at present published (1800-63 and 1863-73) are the names of about 57,000 authors, treating the names in the second part as entirely new. Of these, about 30,000 have only one paper each, and the remaining 27,000 average about eight papers each. In view of the tendency of all writers to devote themselves to special subjects, three heads seem a fair allowance for the papers of each of the 27,000 authors. We have thus 111,000 authors' names to be catalogued under 5000 heads, giving an average of about 22 names to each head. Such a list, printed in the style of the present catalogue, but with three columns instead of two in a page, would fill a volume of about 800 pages. Each of the present volumes contains about 1000 pages, and is sold at 20s., which we are told covers the cost of the paper and printing. If the sections devoted to the various sciences—chemistry, geology, &c.—were published separately, the sale would probably be large.

With regard to the use of this list, the labour of looking up 20 or even 50 names in the main catalogue would generally be trifling compared with the unavoidable labour of reading the actual papers when the references had been found. In many cases the dates would show at once that certain authors need not be referred to. Even if we had a complete alphabetical subject index, it would be necessary to think of every possible word by which the particular subject in question might be denoted, so that the classified list, though more troublesome at first, would often prove more satisfactory in the end. With 5000 heads for the whole of science, perhaps 750 might be allotted to physics, and of these, 150 to light. This would admit of such subdivisions as velocity of light, colour sensation, fluorescence, selective reflection, magnetic rotation of the plane of polarization, &c. Those subdivisions should be selected, into which the actual papers most naturally fall, rather than those which seem ideally correct.

The labour of preparing such a list as I propose would be in itself considerable, but, compared with the colossal enterprise which the Royal Society has already carried out, it would be small, and the service to science would be great.

Hotel Buol, Davos.

JAMES C. MCCONNEL.

Osteolepidæ.

THE letter of your correspondent "R. L. + E." somewhat misses the issue raised in the passage to which he refers. In that passage the question was not raised whether or no we are right in making family names from the inflected form of the generic ones, the sole contention being for uniformity in this respect. Thus, if we are right in making *Rhizodontidæ* (and not *Rhizodidæ*) from *Rhizodus*, we clearly ought to have *Osteolepididæ* (and not *Osteolepidæ*) from *Osteolepis*, both these generic names being precisely analogous compounds. If, on the other hand, your correspondent is right in saying that we should regard all such names as adjectival, then we ought at once to abolish family names like *Macropodidæ*, *Dasypodidæ*, *Octodontidæ*, &c., in favour of *Macropidæ*, *Dasypidæ*, and *Octodidæ*. R. L.

THERE can be no question that "R. L. + E." is himself mistaken in his arbitrary assumption of a rule for the formation of compound adjectives in Greek. Sometimes the lengthened genitive is used as the stem, as in *δισάματος* ("disomatus"); sometimes the short nominative stem is employed, as in *δίστομος* ("distomus"); and sometimes both forms occur side by side, as *φιλάματος* ("philamatus") and *φίλαιμος* ("philæmus"), the former seeming to be preferred. These are words actually in use in Greek writers, and any lexicon will give plenty of other instances. But his whole argument is beside the point; the question is not whether an adjective is formed from the lengthened genitive, but whether an adjective, formed from a noun

which lengthens its genitive, lengthens its own genitive. It does so in every instance; e.g. we have *καλλιθρίξ* with genitive *καλλιθρίχως*, *μικροπτερυξ* with genitive *μικροπτερυγός*. Hence, in the Lepidoptera, we rightly call the family, of which *Micropteryx* is the type, the *Micropterygidae*.

Osteolepis, though not occurring in Greek writers, is not "of questionable form," but as good a word as *φιλόπολις* and *φιλόπατρις*; and just as the latter actually forms a genitive *φιλοπάτριδος*, so also *οστεόλεπις* would form *οστεολέπιδος*, and the family name would be *Osteolepididae*. Finally, it is to be remembered that the family name is not formed from a "possible" generic name, but from an existing one; so that *Osteolepus* is out of the question, and indeed is only "possible" because there happens to be a word *λέπος* from which it can be derived.

I must apologize for troubling you at this length, but my fellow-workers in science are not unfrequently so hazy on the subject of classical nomenclature that there is a need for the setting forth of sound doctrine.

E. MEYRICK.

The College, Marlborough, January 25.

As to the facts of word-formation in Greek, Mr. Meyrick is, as was indeed to be expected, quite right, and might have put the case even more strongly. The short forms, like *πολύστομος*, are much rarer than those in which the full stem is found, like *πολυσώματος*. They are, indeed, unless I mistake, found only with the neuter stems in *-ατ-*, as in *δερμα(τ-)*, *στομα(τ-)*, *σωμα(τ-)*, *αίμα(τ-)*, *σπερμα(τ-)*, and appear to be a speciality of that class of nouns, where they occur beside, but not to the exclusion of, the full normal forms. There is no ground for thinking that a derivative form in *-λεπος* could be formed from the noun *λεπής*, *λεπιδ-*, or a derivative in *-ornos* from *ὄρνις*, *ορνιδ-*. **Osteolepus* and its alleged pl. **Osteolepi*, may certainly be pronounced impossible on Greek analogies; and could not even be grounded on the by-form of the noun, *λέπος*, stem *λεπε(σ)-*, since the adjective from that *-os*, *-es* stem, would necessarily end in *-λεπής*, *-λεπες*. As, therefore, *Osteolepid-* is the stem of the noun, the name of the family, on Greek analogies, is necessarily *Osteolepididae*.

But I do not myself think that it is *always* necessary to conform to Greek analogies; I think that the convenience of English needs is also to be considered. In *Osteolepis*, *Osteolepididae*, I think English needs are fairly answered; but it is not always so; some formations of the kind are hardly pronounceable, or when pronounced, through shifting of accent, presence of mute letters, pronunciation of *c*, *sc*, as *s*, and the like, do not in the least suggest their meaning.

Indeed, I think it very desirable that the Linnean and other learned Societies should establish a Committee of Nomenclature, who should consider every new name proposed, and pass or reject it, after taking into consideration not merely etymological correctness of formation, but what I think far more important, capability of being pronounced, distinctness from other existing names, and fitness for yielding derivatives, if needed. I entirely disagree with the notion that every discoverer of a genus has a right to confer a name upon it which he himself has never considered how to pronounce. I have had occasion repeatedly to ask inventors of such names, how they pronounced them, and have more than once been told that they had never thought of that, only of getting the Greek form right, and that I, forsooth, must settle the pronunciation! Such men were, of course, utterly unfit to confer names, however eminent as scientists. Every name that does not lend itself to a distinct and easy pronunciation, or which, when pronounced, is undistinguishable from some other word spelt quite differently (e.g. words in *cano-*, *ceno-*, *sceno-*, *seno-*, &c.), ought to be rejected. Better invent new words off at the ground, having *no etymology*, than put together Greek roots in combinations unsuitable for modern mouths and modern ears. Why must modern knowledge be confined within the swaddling-bands of a nomenclature 2000 years younger?

J. A. H. MURRAY.

Oxford, January 28.

Compounds of Selenium.

IN your issue of the 23rd ult. (p. 284) you insert a paragraph describing experiments by M. Chabrie on compounds of selenium. While fully acknowledging the value of his work on the phenyl derivatives of selenium, I think it right to state that much of M. Chabrie's investigation has been anticipated by Mr. F. P.

Evans and myself as long ago as 1884; and that several of his assertions are incomplete and incorrect. The tetrachloride, SeCl_4 , as we then showed, exists in vapour as such between 180° and 200° ; with rise of temperature it dissociates, but even at 360° , dissociation is incomplete. In our paper (*Trans. Chem. Soc.*, 45, 62) the progress of the dissociation is followed.

We do not agree with M. Chabrie's suggestion that the products of dissociation are the other chloride, Se_2Cl_2 , and chlorine, for the very good reason that Se_2Cl_2 itself is an extremely unstable body. Instead of, as he asserts, having a constant boiling-point at 360° , it begins to boil at 145° ; and temperature rises to 173° , while a mixture of Se_2Cl_2 and SeCl_4 distils over, leaving a residue of selenium. The vapour-density of Se_2Cl_2 was found by us apparently normal; but this is caused in reality by the fact that it also dissociates completely on vaporization into selenium and chlorine without change of volume, according to the equation $\text{Se}_2\text{Cl}_2 = \text{Se}_2 + \text{Cl}_2$.

A revision of the experimental work of previous investigators is obviously to be desired; but it should be undertaken as a revision, else inaccurate conclusions may be drawn from incomplete work, as they have been in this case.

Perhaps I may be allowed to take this opportunity of inquiring by what reaction selenophenol, $\text{C}_6\text{H}_5\text{SeH}$, is produced from the red oil, $\text{Se}_2(\text{C}_6\text{H}_5)_2\text{C}_6\text{H}_4\text{Cl}$, out of which it is said to deposit on standing?

WILLIAM RAMSAY.

University College, Gower Street, February 3.

Royal Victoria Hall and Morley Memorial College.

I HAVE only just read the article on Polytechnics for London in your number for January 16 (p. 242). I hope it is not too late to offer a few words of comment on it. Nothing is said of that part of the Commissioners' scheme which applies to the Royal Victoria Hall and Morley Memorial College, probably because the amount intended for them is comparatively small—£6000 down for structural alterations, and £1000 a year to be divided between Hall and College. But it derives an importance beyond what is due to the amount of the grant, from the fact that it is no castle in the air, but a going concern, and had begun its useful life long before the Commissioners had planned their scheme. Moreover, many of your strictures do not apply to this particular part of it. You say there will be, under the new scheme, "no People's Palaces—only Young People's Institutes." You object to limitation of age, and to smoking being forbidden, and you conclude by urging most truly that "life should come first, then buildings," for life develops from within.

May I therefore, in as few words as possible, give an account of the history and present position of the Hall and College, with the object of showing that the truths you urge have been already laid to heart?

The Hall (formerly the "Old Vic." Theatre) was opened 9 years ago as a temperance music hall, to compete with the degrading attractions of ordinary music halls, about which there was less stir in those days than now. At first we had variety entertainments every night, but before long the experiment was tried of introducing something better on certain nights. There is no need to enter into the ups and downs through which experience was gained; suffice it to say that we still have "variety" pure and simple on Saturdays, when our gallery boys, as well as well as their elders, enjoy themselves to their hearts' content, to the number of 1800 or so; and a modification of this kind of entertainment takes place before a much smaller audience on Mondays and Wednesdays. But on Tuesdays (as your readers know from the occasional notes which appear in your paper) we have popular illustrated lectures from many of our leading scientific men, who continually express their gratification at the appreciative attention of the audience. On Thursdays we have ballad and operatic concerts, at which (interspersed among operatic selections) tableaux, representing scenes from operas, are given. And on Fridays there are temperance entertainments.

All this will be left unchanged by the new scheme; and is not this something very like a "Palace of Delight"? Smoking is and will be freely carried on (except in certain parts of the house on concert nights), and anyone, without distinction of age, can come in by payments ranging from twopenny on Thursdays and Saturdays, and from a penny other nights.

But this is not all. A little more than four years ago, classes were started in the unused dressing-rooms at the back of the stage, in response to a demand for more systematic instruction from some of those who had attended the lectures. The first