

cluding a very aberrant mode of formation of the mesoblast and the coelome. We are fully entitled to say that by the details of its very earliest development and of its blastocyst Tarsius is more closely related to man and the monkeys than it is to any other known mammal. And that the gulf separating Tarsius from the Lemurs on this head is far wider than that separating it from many Insectivores. This may be inconvenient for paleontologists, but none the less it remains a stubborn fact. And a fact of all the more primary importance because we must recognize that the influence of external agencies on the gradual modification of teeth and of limbs is certainly more direct than that which is brought to bear upon these very early and very hidden and intricate processes that occur inside the uterus in a most delicate vesicle that is hardly visible to the naked eye.

These few words of protest against an obvious misrepresentation may suffice. A full account both of the early development and of the placentation of Tarsius is in preparation; to this I may be allowed to refer those who might desire a fuller account of the various points above alluded to.

A. A. W. HUBRECHT.

UTRECHT, March 8, 1897.

#### THE JOURNAL OF SCHOOL GEOGRAPHY.

TO THE EDITOR OF SCIENCE: Professor Russell's discussion (SCIENCE, March 19) of the expediency of starting an independent *Journal of School Geography*, instead of consolidating the existing geographical journals into a single publication under the joint management of the various geographical societies in this country, affords a very pretty basis for divided opinions. To my mind there is no probability at present that the American Geographical Society, the National Geographic Society, the Appalachian Mountain Club, the Geographical Society of Philadelphia, the Geographical Society of the Pacific, and the Sierra Club of California will merge their interests and journals into a single American Journal of Geography. However attractive such an ideal may be, it does not accord with the usual run of human nature. Local and individual effort, manifested not only in the maintenance of local societies, but

in the publication of more or less local journals, is likely to be the course of geographical events for many years to come.

Improvement of the existing geographical journals is probably a matter that their respective editors have warmly at heart, and I believe that they are all agreed as to the first step towards such improvement; namely, an increase in the number of geographers among their members. Several different methods may be effective in promoting this increase. The societies offer various attractive opportunities to members, in the way of libraries, lectures, excursions and so on. This promotes membership, and among increasing members it is fair to suppose that there will be an increasing number of geographers. Quite another method looks to the production of a larger crop of geographers, when the children of to-day shall reach manhood and womanhood. This method is of slow action, but, if it acts at all, it is sure. It tries to strengthen the future crop by careful cultivation of geography during school years. This is, along with other objects, one of the chief ends of the promoters of the *Journal of School Geography*. It is an end that cannot be attained by Professor Russell's plan, for the expense of such a journal as he proposes would put it entirely out of reach of schools and teachers. Moreover, in the present condition of geography and of teachers of geography in the schools of this country, there is no reason for disguising the fact that a general journal of geography, however ably edited and however well supplied with 'studies for students,' could not possibly attain the circulation among school teachers that may be attained by a special journal of school geography, directly and wholly prepared for teachers' use.

It is worth noticing that the systematic encouragement and development of geography in the schools has never been a leading feature of any geographical society in this country. The American Geographical Society, with a large membership and a rich library, has had no influence worth mentioning on the teaching of geography in the schools of New York; it has never (unless within the last year or two) tried to exert such an influence; it has been conducted with apparent entire indifference to the

development of members in the younger generation. The same is essentially true of our other geographical societies; they are not particularly concerned with the educational aspect of geography. The prizes offered to schools by one society failed of effect, for there was no substantial basis for the work that they were intended to excite. The societies are chiefly concerned with narrative reports of expeditions and excursions, and with occasional articles of more scientific and studious quality; but even the latter rarely have any effect on the schools, for they hardly ever reach the teachers. Under existing conditions, with membership in the various societies constituted as at present, it is not likely that the conduct of the societies will be materially altered. The educational element of geography will be left in the hands of educators. It will not be taken into the hands of travellers. It will not be taken up by the members who, unable to travel themselves, still enjoy hearing the narratives of returned travellers.

But an entirely additional object is also in the minds of the promoters of the *Journal of School Geography*; namely, the better education in geography of the tens of thousands of school children who will never hear anything about geographical societies; and, to this end, the better cultivation of the great body of teachers who ought in an ideal state to be students of geography, and who as such ought to be members of geographical societies, but who under existing and long enduring conditions can not be either. The great body of our teachers have had but an elementary education and have little time or inclination for study. They cannot be reached by a high-class scientific journal, such as Professor Russell contemplates, but some of them may be reached by a personally subsidized journal of low subscription price. Their work will thus be improved, and the children under them will profit thereby; but this is an end which the consolidated *American Journal of Geography* cannot hope to reach. Indeed if, under a rearranged human nature, such a journal were established, it could not have a better ally than the *Journal of School Geography*. Even as matters stand, the new journal hopes to be the means of first informing

hundreds of school teachers that such institutions as geographical societies and such publications as their journals exist in this country. It is a mistake to confound the objects and fields of two publications, so essentially different.

I believe that Professor Russell is again mistaken in saying that there is nothing in the character of the new journal to indicate that it possesses greater vitality than its predecessors. One of the predecessors was a highly sensational affair, with more pretension than performance. Another was a perfectly sincere performance, but directed to a miscellaneous audience, not conducted by a teacher of school geography, and burdened with the expense of excellent illustrations. The *Journal of School Geography* has the advantage of a single, definite aim. It looks for external support to subscriptions from schools and teachers and from libraries to which teachers resort. It expects that, for a time at least, receipts from subscriptions may not equal expenses; but expenses will at the beginning be kept as low as possible by holding the pages to a minimum, and inserting illustrations only when they are paid for by the author of the illustrated article. In the management of such a journal, some might say it is best to borrow capital and begin with fine illustrations so as to catch subscriptions quickly. Others might say it is best to pay as you go. The latter plan was adopted, and I believe wisely. As soon as illustrations can be afforded, they will be introduced. At present the expenses are moderate; the subscriptions are steadily coming in; and, for one, I believe that such a *Journal of School Geography* may be made to come so near paying for itself that its life will be assured.

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TO THE EDITOR OF SCIENCE: Professor Russell in his letter, entitled 'A New Geographical Magazine,' in SCIENCE, March 19th, has given a chance for an expression of opinion that, as responsible editor of the publication in question, I cannot allow to pass. I question very much the suggestion that the ends sought by the *Journal of School Geography* could be better attained by a consolidation of the existing

geographical periodicals into one publication; with a department for teachers. The plan of adding such a department to an existing journal was proposed to the editors of the *Journal of School Geography* and the offer declined because they believed:

1. That the cause of geographical education warranted a separate periodical.

2. That teachers would not and could not subscribe to so expensive a journal as a valuable scientific periodical must be.

3. That educators would many of them shun pedagogic assistance vended by a society whose aims were primarily scientific.

4. That the organ of no one society or combination of societies could be advertised so as to reach the greater number of teachers.

5. That a journal for teachers should be edited by teachers.

I believe that the new journal has a legitimate right in the educational world for all these reasons and many more. The knowledge of the world may be enlarged for the few by the geographical societies, through the promotion of exploration and research and the publication of the results thereof. It may be enlarged for the many by such a journal as the one in question, if the editors sift and select new and old facts and put them in a form and dress for the larger public, who are not in touch with modern geographic progress. The increasing of the geographic knowledge of the world at large by either of these methods is a proper aim for those interested, and one may be as useful and necessary a task as the other. It may be that success can better be attained by specialization than by a combination of efforts. The *Journal of School Geography* will continue to select facts from the great mass of geographic information, to try and express them in a simple and straightforward manner, and do what it can to help the geographic societies and publications in the wider dissemination of knowledge of the world. This work with the teachers and youth in this generation may bear fruit in the next generation in a larger demand for the consolidation and improvement of the publications of a scientific character.

I agree with Professor Russell that there is need of bettering all the scientific geographical

publications in this country. I disagree with him in his idea that there is no room for a journal whose aim is not the publication of new scientific results, but the broader dissemination of geographical knowledge, expressed not in childish, unscientific or pedagogic terms, but in simple English, with a knowledge, on the part of the editors, of the needs and tastes of the readers to whom they would appeal.

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#### THE DRAINAGE OF THE SAGINAW VALLEY.

TO THE EDITOR OF SCIENCE: Professor Davis has asked me to add a few more instances apropos of his note on the drainage of the Saginaw Valley (p. 337, issue of Feb. 26, 1897). The peculiar circuitous drainage due to moraines of retreat, in which streams do not flow directly to the water of the bay near by, but fetch a compass and make backhanded branches, has numerous other examples in Michigan. Among the most striking are the Sturgeon, which heads in the Huron Mountains, Sec. 9, T. 49N., R. 32E., and flows clear around Keweenaw Bay to empty into Portage Lake, and the region of Grand Traverse Bay, where the Rapid River, Boardman River, Platte River and the Betsie River show a similar type of drainage, which we may call willowy. For in discussing a relation of branches it seems natural to use a term borrowed from botany. A comparison of a drainage map of the Saginaw Valley with the pendent branching of the willow will show the appropriateness of the comparison, and the term can easily be changed by those who prefer Latin terms into saliculous.

ALFRED C. LANE.

#### SCIENTIFIC LITERATURE.

*A Dictionary of Birds.* By ALFRED NEWTON, assisted by HANS GADOW, with contributions from RICHARD LYDEKKER, CHARLES S. ROY, etc. London, A. and C. Black. [The Macmillan Company, 66 Fifth Avenue, New York.] 1893-1896. 1 vol., 8vo, pp. i-xii + 1-124, i-viii + 1-1088. Map and unnumbered figg. in text.

The ninth edition of the *Encyclopædia*