

of the g_{ik} 's that would be necessary to produce his effect do not occur in the region of the world in which we live.

I did not invent Einstein. I am not responsible for the theory of relativity or the deductions made from it by physicists and mathematicians. It seems to me that Dr. Humphreys' criticism should be directed toward them rather than toward their humble interpreter.

EDWIN E. SLOSSON

SCIENCE SERVICE, WASHINGTON

ON THE FORMATION OF FAMILY NAMES LIKE TINGIDÆ

It is astonishing to observe how great a display of erudition may be made in vain, the net result being error. In recent numbers of SCIENCE Dr. Holland, Mr. A. C. Baker and I have issued manifestoes on how to construct family names based on third declension *i*-stems not increasing in the genitive, and in each case the argument has been vitiated by at least one mistake. However, each author has contributed an item of truth, and it is now possible to settle the matter for good and all.

As Dr. Holland says, the stem of the Latin word *Tinge* is undoubtedly *Tingit-*; but, as Mr. Baker points out, Fabricius did not adopt this word, rather he introduced into the neo-Latin language the word *Tingis*, genitive *Tingis*, stem *Tingi-*. This brings us to my contribution, *i. e.*, that Fabricius considered *Tingis* "his own and indicated what its declension should be"—perhaps a somewhat misleading statement of the idea clearly formulated by Mr. Baker. My argument, however, had the merit of reaching the right conclusion, namely, that *Tingidæ* is the correct form for this family name, and I have no hesitation in diagnosing as pathological the form *Tingitidæ* in this particular case and *Tingiuidæ* or its like in all similar cases.

I have always had a vague notion, founded chiefly on unconscious observation, that in forming patronymics from *i*-stems (not increasing in the genitive) the final *i* of the stem is to be dropped; and, indeed, who ever heard of such terms as *Apiidæ*, *Aphiidæ*, *Feliidæ* or *Caniidæ*, until the publication of the last num-

ber of the Proceedings of the Entomological Society of Washington?¹ To confirm or disprove this belief and so to settle the matter beyond question, I lately addressed an appropriate question to Mr. Henry Pennypacker, now of Harvard University and formerly Greek teacher and headmaster of the Boston Latin School. In reply I received the following statement of the grammatical principle concerned, as the joint opinion of my old teacher and of Professor Clifford H. Moore, head of the department of the classics at Harvard:

Rules regarding the formation of family names which may be described as patronymics are subject to modification not only in the interest of convenience but also of euphony, and in spite of the fact that the stems of the nouns you mention [*Nabis*, *Apis*, *Tingis*, *Coris*, *Aphis*] in Latin end in "i" and that the termination "idæ" is conventional in such cases there seems to be no doubt that the spelling with a single "i" carries universal authority and the penultimate "i" is short in quantity.

The authors of the International Code, of course, were fully conversant with this principle and expected it to be applied in connection with Article 4, as it had been in the past.

Lest my acquaintance with the unexpressed expectations of the members of the commission be questioned, I should say that it is founded on three considerations: (1) They were and are educated men; (2) their own works contain no such monstrosities as "*Feliidæ*" or "*Anguiidæ*"; (3) authors and editors of standing throughout the world have unanimously acted upon the assumption which I have expressed above.

There remains the widely but not universally accepted belief that priority should obtain in family names, but the Code is not clear on this point (*i. e.*, What determines the type genus of a family?); however this may be settled in future, we arrive in the present instance at the following conclusions: (1) that *Tingidæ* is nomenclaturally and philologically correct, as Westwood was well aware when he proposed the name in 1840; and (2) that it will not be necessary to make the change in hundreds of

¹ The editor, Mr. A. C. Baker, substitutes the term "*Aphiidæ*" for the term "*Aphididæ*" used by the author of an article.

family, subfamily, tribal and divisional names which Mr. Baker's novel idea implies.

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THE BEGINNINGS OF AMERICAN GEOLOGY

TO THE EDITOR OF SCIENCE: Referring to Dr. T. C. Mendenhall's article on page 661 of the current volume of SCIENCE, I desire to say that I have no wish to enter into any controversy in regard to the facts of Newberry's connection with the Geological Survey of Ohio and I sincerely hope for the benefit of the history of American geology that Dr. Mendenhall is correct. Moreover, I yield to none in my high regard for both Newberry and Orton. My reference was entirely to a period prior to Orton's accession to the directorship of the survey and to the feelings which Newberry publicly expressed at the time I was a student under him at the Columbia School of Mines.

In confirmation of which I can only add that Charles A. White, than whom none knew Newberry better, writes in his memoir that was published by the National Academy of Sciences as follows: 'In 1874 the work of the survey was suspended by failure of the legislature to provide the necessary funds and much dissatisfaction and even bitterness of feeling was engendered among those who had taken part or had been interested in it. Dr. Newberry thought and with apparently good reason that injustice had been done him in his relation to the survey.'

MARCUS BENJAMIN

QUOTATIONS

THE FEDERAL BUDGET

THE estimates of the money needed by the federal government for 1924 are about \$3,000,000,000, excluding the Post Office, which it is hoped will be self-supporting. At a very moderate estimate, over two thirds of this will be spent on wars past, present or future. Nearly half a billion goes to the veterans, about a billion goes into the service of the debt accumulated in the last war, well over half a billion to maintaining the army and navy.

Half of the total expenditure is a debt to veterans and to bondholders. It is fixed. The other half of the expenditure is for the army,

the navy and the civil government. Here alone retrenchment is possible. Assuming that the administration sees no way to reduce the cost of the army and navy, but on the contrary, according to Secretaries Denby and Weeks, would like to increase these costs if possible, the taxpayer's position comes to this: If the whole civil government were dismantled or run free of charge the tax-saving would be less than 30 cents on a dollar.

Some part of this 30 cents is all that Mr. Harding has any hope of saving. The part which he is now thinking about is the part which goes into "research, improvement and development." Less than \$11,000,000 goes to research. If it were all abolished it would save just a trifle over one third of a cent on each dollar. Ten millions goes to education. Abolish this item and you have cut your budget .003 per cent. Sixteen millions goes for public health. Cease this activity and you save half a cent on a dollar. Abolish all public works, river and harbor improvements, road construction, the Reclamation Service, Alaskan railroad expenditures, hospital construction and other public improvements and the total saving would be less than 5 cents on a dollar. Abolish everything in the way of "research, improvement and development" and the taxpayer would not save 7 cents on a dollar.

The budget figures are the greatest indictment of modern civilization. They show that two thirds of the energy of government goes to the business of fighting, and that less than a third of the remaining third goes to the civilized business of research, improvement and development.—*The New York World*.

THE APPRECIATION OF SCIENCE

AT the anniversary dinner of the Royal Society it is customary to include among the guests some public men of distinction in other fields than those with which scientific men are concerned. Among such guests this year, at the dinner held on November 30, were Mr. Justice Darling, who proposed the toast of "The Royal Society," and Mr. L. S. Amery, first lord of the Admiralty, who responded to the toast of "The guests." If the assembly had consisted of leading representatives of literature or