

clines in the new-made recent coast prairies. Furthermore, these uplifts are most probably due to isostatic movements rather than to accumulations of gas.

Another interesting fact which is developing is that these oils are not associated with extensive beds of either plant or animal remains, but at one place, Saratoga, where they outcrop, they apparently originate in ferruginous sands, and this occurrence is strikingly suggestive of Mendeleef's theory that petroleum is formed by the action of warm waters on carbide of iron at considerable depths. But conclusions on this subject are as yet premature.

ROBERT T. HILL.

DISCORD AND BEATS.

TO THE EDITOR OF SCIENCE: In a review of books on physics in a recent issue of SCIENCE, I find on page 259 the remark that the author "has defined 'discord' more sharply than the facts warrant, by failure to recognize Mayer's law, which expresses the duration of the residual auditory sensation as a function of vibration frequency, the equation being expressible in a curve which Professor Mayer published in 1894 (*Am. Jour. Sci.*, Jan., 1894)." That authors of text-books of physics discuss *psychological* problems may be very well; for it is certainly better for the student to learn some psychological theories in the physical laboratory than to learn them not at all. But, unfortunately, it is rare to find a physicist who is sufficiently familiar with the psychological literature. Permit me to make these two statements: (1) That a 'discord' cannot be defined by 'beats,' the psychologists have some time since agreed upon. The physicists—on the authority of Helmholtz, whose 'Tonempfindungen' appeared 40 years ago—still make use of this definition. (2) Mayer's curve, as recent experiments (*Zeitschrift f. Psychol. u. Physiol. d. Sinnesorgane*, 20: 408-424; reviewed in the *Psychological Review*, 7: 88-90, 1900) prove, does not express the dependency of the duration of an after-sensation on the frequency of vibration. The duration of the after-sensation does not seem to depend upon the pitch at all.

MAX MEYER.

UNIVERSITY OF MISSOURI.

THE INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

TO THE EDITOR OF SCIENCE: Can nothing be done even at this stage to secure a better system of classification for the international catalogue of scientific literature now under process of preparation under the general supervision of the Royal Society in London? In library management this country is, as probably every one is aware, in advance of most, if not all, countries, and the result of this is that the practical application of the science of classification to the cataloguing of books and articles has been carried farther in this country than elsewhere. Published systems of classification here are more complete, there is a larger literature on the subject, and a greater number of libraries have been catalogued on a classified system. I do not think anybody familiar with classification and its practical application will hesitate in condemning the classification which has been adopted by the Royal Society. In botany, it is ridiculously incomplete. It is impossible, as I know from experience, to classify material on this subject, in the shape of papers, without a system which is at least carried down to families; and in many cases one extended to genera is wise.

The classification in geology is equally inadequate and makes insufficient provision for the great extension which has taken place in physiographic geology in the last ten years.

If any one wishes to see what can be done in the line of careful classification for geological purposes, M. Mourlon's 'Classified Index of Geological Papers' on the Dewey Decimal System will offer a striking contrast to that presented by the meager array of classification in the Royal Society. Mnemonic aids are altogether omitted in this classification, no common system of number being used for common types of classification in different subjects. In the biological field, no effort has been made to follow a similar arrangement of homologous subjects.

In fact, I think, I speak within bounds in saying that no one versed in this subject can examine this classification without feeling that it is prepared by some one who has neglected to study what has already been done in this field.