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Words, Meanings, and Styles.

I.

FOR several weeks various opinions have been expressed in our correspondence columns as to the desirability or otherwise of using the word *scientist* to designate in a generic sense any one actively engaged in the advancement of natural knowledge by investigation. The term is not an Americanism, as is often supposed, but was introduced by Dr. Whewell in 1840 "to describe a cultivator of science in general." In a letter published in *NATURE* of November 29, Dr. Norman Campbell pleaded for approval of the word, and asked objectors to suggest a single substitute for it if they were not willing to adopt it. We invited opinions upon the question from a number of distinguished representatives of letters as well as of science, and have published some of the replies with which they have favoured us. The general attitude of scientific workers was clearly stated by Sir Ray Lankester in our issue of December 6; and it is one of dislike. Literary authorities, on the other hand, are prepared to give the word a legitimate place in the English language, and they point to many similar hybrids which have been admitted into our vocabulary without question.

It cannot be said that, as the result of the discussion, any single word has been suggested which is likely to come into general use as a substitute for *scientist*. Some of our correspondents have expressed complete abhorrence of this term, others have given unwilling acceptance to it, and a third group approves of it. While, therefore, we do not propose to depart from our custom of avoiding the word in our own practice, or in unsigned contributions for which we accept editorial responsibility, we are content to leave individual authors to use it or not, as they may prefer. Our opinion is that one of the main objections to the word is that it is too comprehensive in its meaning. Sir Israel Gollancz thinks the word should not be limited to workers in the field of physical or biological science, and Prof. Wildon Carr would make it imply philosophers as well as such workers. What they apparently desire is a word which is equivalent to the French *savant* or the German *Gelehrte*, but it can scarcely be said that the term *scientist* was coined with this intention.

The fact is that, in these days of specialised scientific investigation, no one presumes to be "a cultivator of science in general." A man is a chemist, physicist, biologist, botanist, or worker in one or more particular branches of science, and he prefers to be designated as such rather than to be placed in an indefinite group of "scientists." In an artificial language like *Esperanto*, it is easy to assign a single termination, such as "ist," to all professional occupations, but no hard and fast rule of this kind can be imposed upon the structure

of a living language. Certain words come into use, while others are discarded, and no purely logical or etymological plan of formation is practicable. "Mathist" and "electricist" may, as Sir Richard Paget suggests, be improvements upon "mathematician" and "electrician," and Prof. Armstrong's "scien<sup>er</sup>" may be a suitable substitute for the word "scientist," but whether the termination be "ist" or "er," custom alone will decide which will survive. We have geographer and geologist, engineer and technologist, philosopher and physicist, astronomer and spectroscopist, all in common use, whether rightly or wrongly formed. The public has similarly accepted "scientist" to signify a follower of science of any kind, and will continue to use it even though it is not approved as good currency in the scientific world.

An inquiry of the secretaries of the leading British scientific societies shows that the word is very rarely used in their publications and is always avoided when it can be conveniently avoided. It is not used officially by the Royal Society of London or of Edinburgh, the British Association, or the Royal Institution, and each of these bodies often has occasion to refer to workers in science as a whole. The feeling of the Cambridge University Press is strongly against the use of the word scientist, and when, in one instance, it occurred in the title of a work submitted to the Syndics, a strong protest was raised and the title of the book was altered. On the other hand, the Clarendon Press, Oxford, does not object to the word being used in its books, and says: "Of course we avoid any attempt to legislate and are guided principally by usage." There is no doubt whatever that the balance of feeling in scientific circles is against the word. Whatever its future, therefore, we are not prepared to depart from our practice hitherto of avoiding the word, and we leave it to others to convert it into the currency of cultured usage.

The variety of opinion on the recognition of the word scientist enables a conception to be formed of the labour involved in providing a good technical vocabulary for a new subject such as aeronautics. There is, first of all, the difficulty of setting up a systematic nomenclature with reasonable claims to be logical without being pedantic. In addition, there is the still greater difficulty of obtaining general acceptance by such diverse people as mathematical physicists, technical engineers, constructors, pilots, mechanics, the Services, and last, adoption by the press, most influential of all. The Technical Terms Committee of the Royal Aeronautical Society, which was reconstituted in 1920 as a section of the British Engineering Standards Association, produced the present officially accepted glossary for aeronautics; and the Advisory Committee for Aeronautics in the U.S.A. has shown

much broad-mindedness in adopting the great majority of the British findings. There are important exceptions, however. Dr. Alexander McAdie, director of the Harvard meteorological station at Blue Hill, in writing to us about the word scientist comments on the continued use of the form "aeroplane" in Great Britain, replaced by "airplane" in America.

Generally speaking, it will be found that, in the official glossary for aeronautics, *air-* is compounded with common English words, or with words derived through the French language, while *aero-* is compounded with technical terms of direct Latin or Greek origin. Thus: *Air-man, ship, craft, shed, screw*, but *aero-stat, naut, bate, dynamics*; etc. *Aerofoil* is an exception and should be either *airfoil* or *aerofolium*. *Aeroplane* is right by the rule, but *seaplane*, introduced by the Admiralty during Mr. Churchill's regime, and *landplane, floatplane, wheelplane* proposed but not yet accepted, all justify *airplane*. *Airplain* is ruled out by the lack of association of *plain* with wing-like structures; but the influence of the French word *aéroplane*, the interest vested in the title of our own liveliest of technical periodicals, and ingrained use, will prevent the giving up of the form *aeroplane* for a long time. A very stout battle has been fought over the introduction of *air-screw* to avoid such combinations as *tractor-propeller* and *pusher-propeller* which are retained in the U.S.A. vocabulary. The most awkward gap in the language of aeronautics is due to the want of words to denote aircraft both lighter than air and heavier than air. *Aerodyne* was proposed by analogy with *aerostat*, but nothing more has been heard of it; *H/A craft* and *L/A craft* beg the question, and it may be hoped that *lighter-than-air-craft* will not survive. In the face of these few examples of the difficulties which crop up in a technical vocabulary, it is a bold prophet who will predict the terms around which the language will finally crystallise.

In discussing the use or disuse in English of any particular word, the very mixed origin of our language must, of course, be borne in mind. Anglo-Saxon, Latin and Greek have all provided roots which appear in words in general use, while, if the vocabularies of the sciences and arts are taken into consideration, it is clear that a much wider range of languages has also been used. This may perhaps account for the ease with which foreign words are introduced, often as slang at first, and eventually adopted, with little if any change in spelling. It should also incline us to be tolerant of hybrid words, though, of course, the making of new hybrids, unlike the work of the plant-breeder, cannot be expected to be productive of beauty and increased usefulness, and should be discouraged.

The question is discussed in an interesting article

by Mr. George H. Bonner in the December issue of the *Nineteenth Century*. The real point is this: A word having crept into use, what is to be the ultimate authority for discarding or retaining that word as a definite part of the English language? In France the decision is in the hands of the Academy. A word is "adopted" or otherwise and the writers of the day follow, more or less, the recommendations made. But that will not prevent the use of a word in conversation and by the general public. After all, it is the growth of popularity of a word which is a factor in bringing it to the notice of the Academy. If a new word is useful in that it conveys an exact meaning not readily expressed in a word or concise phrase at present accepted as legitimate, it would seem that popular usage will gradually enforce its adoption. Thus the vocabulary of a language, if it is to meet the demands made upon it by a progressive people, must be continuously in a state of flux.

This may explain, in part, why so little progress has been made in the adoption of an international language. Apart from the claims of nationalism, which have been increasingly insistent during the past few years, "living" languages must, with the growth of new ideas and the introduction of foreign elements, be always developing. It therefore becomes difficult for those who are not, as it were, "living with the language," to keep pace with changes of meaning. As regard purely artificial languages, the question of following the dictates of an academic central authority again arises. The authority, in most cases, will trail behind popular usage.

There is, however, a further consideration, as Mr. Bonner points out in the article to which we have referred. The language of conversation is not normally the language of serious writing. In talking, the periods are generally comparatively short and the argument often gains by the use of terse and incisive expressions which would be totally out of place in written contributions. When it is a question of placing on record, for serious discussion and reflection, facts and thoughts which represent additions to the sum of human knowledge, then accuracy of meaning and dignity of expression should be the rule. Here again, in English, popular usage would seem to be the ultimate authority, though with the restriction that "popular usage" should refer to the diction and style of the better educated and more intellectual of the community. The language of a progressive people must itself be progressive; and as the word scientist expresses more clearly and with less ambiguity than any other single word the meaning it is intended to convey, it is likely to survive the dislike which scientific workers in general have for it.

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### Continental Drift.

*The Origin of Continents and Oceans.* By Prof. Alfred Wegener. Translated from the third German edition by J. G. A. Skerl. Pp. xx + 212. (London: Methuen and Co., Ltd., 1924.) 10s. 6d. net.

THE wide appeal of Prof. Wegener's theory of the arrangement of ocean and continent is shown by the issue of a third greatly revised edition and of this excellent English translation. His theory is that the continents consist of rigid blocks of sial, or rock characterised by a high percentage of silica and alumina, which are floating partly submerged in a sheet of sima, or rock material composed mainly of silica and magnesia; that the existing continents are due to the breaking up of a once continuous sheet of sial, the fragments of which have drifted to their present positions in consequence of the earth's rotation; and that this drift occurs owing to the plasticity of the sima. Prof. Wegener believes that the continents have been moved for great distances even in geologically recent times, and he thereby, with great ingenuity and attractiveness, explains many problems of geography, geology, climatology, biology, and geodetics. The process offers an easy escape from difficulties and is not to be dismissed as impossible or scouted as fantastic; for in all probability sima is more plastic than sial, and the rotation of the world must make the continental masses tend to lag westward, and press centrifugally toward the equator. The view that the continental masses are subject to some horizontal drift has been often adopted, as, for example, by the reviewer in 1915 (*Scot. Geog. Mag.*, 31, pp. 258-60) to explain the folded nature of the Pacific margin of America, in contrast to the coastal structure on both sides of the Atlantic, and the prevalence of fiords on western coasts. There is no *a priori* objection to the principle, and the verdict on Prof. Wegener's theory will depend on whether it explains more difficulties than it creates.

The author's interesting discussion of the geophysical arguments shows that on this branch of the subject the primary facts are still uncertain. In spite of the apparent precision of mathematical methods, the data are so inexact that the results are inconclusive. Prof. Wegener's theory will, however, probably give a new lease of life to the explanation of the Carboniferous glaciation of India and of some parts of the Southern Hemisphere, by the shifting of the Pole; for arguments, which are unanswerable against that explanation with scattered continents, do not apply to Prof. Wegener's single continent.

The theory of continental drift was suggested by that coincidence in course of the opposite coasts of the