

The Counters of Wise Men*

By DR. ALLAN FERGUSON

“HE began his task (as he himself expressly described to me) by devoting his first care to a diligent perusal of all such English writers as were most correct in their language, and under every sentence which he meant to quote he drew a line and noted in the margin the first letter of the word under which it was to occur. He then delivered these books to his clerks who transcribed each sentence on a separate slip of paper, and arranged the same under the word referred to. By these means he collected the several words and their different significations, and, when the whole arrangement was alphabetically formed, he gave the definitions of their meanings and collected their etymologies from Skinner, Junius and other writers upon the subject.”

This is the technique of dictionary-making, as devised by Johnson, and carried out by him a hundred and eighty years ago in the upper chamber of that house in Gough Square which fortunately still remains, one of London's most cherished monuments. The method was simple, the authorities primitive; but the result showed, on occasion, a freedom and vigour of expression which we can scarcely hope to attain in our more sedate age.

The classic definitions of *lexicographer*, “a writer of dictionaries, a *harmless drudge*”; *oats*, “a grain which in England is generally given to horses, but in Scotland supports the people”; *excise*, “a hateful tax levied upon commodities, and adjudged not by the common judges of property, but wretches hired by those to whom excise is paid”; *pension*, “. . . pay given to a state hireling for treason to his country”; these make lively enough reading to-day, even though now, as then, they “cannot be fully defended and must be placed to the account of capricious and humorous indulgence”. Small wonder that the staid Principal Robertson read through the dictionary twice.

The etymologies of Johnson's work may be dated, and its definitions now and then show signs of tiredness—Joseph's flowers, ‘a *plant*’, is a case in point; but, informed as it was with his massive, immense and forceful erudition, it marked an immense advance on the work of his predecessors. N. Bailey *φιλολογος*, and the rest were genially inclined to the loose in definition and the obvious in etymology—Betty from *beatus*, and belfry from *bell* and *ferre*, “that which bears the bell”, are not unfavourable specimens of their genius. To-day we tread on surer ground, even though, unexpectedly, the commonest monosyllables prove to be the most difficult, in the etymological sense. *Floccinaucinihilipilification* yields its secrets to the analysis of a fourth form tyro, while *puss* and *boy* remain tantalisingly obscure in origin.

* “The Shorter Oxford English Dictionary on Historical Principles”. Prepared by William Little, H. W. Fowler, J. Coulson. Revised and edited by Dr. C. T. Onions. Vol. 1: A-M. Pp. xxii+1306. Vol. 2: N-Z. Pp. viii+1307-2475. (Oxford: Clarendon Press; London: Oxford University Press, 1933.) 63s. net.

We have waited long for a worthy English successor to Johnson's dictionary—a successor the possession of which should be within the scope of a modest purse. We have, of course, that great dictionary, king of all lexicons, which, by the circumstances of its birth, has occasioned one of the happiest pieces of nineteenth century Boswellising on record. BOSWELL: “What would you say, sir, if you were told that a successor to your dictionary would be edited in your own University of Oxford by a Scotsman and a Presbyterian?” JOHNSON: “Sir, to be facetious it is not necessary to be indecent.” But the great Oxford dictionary is one which most of us, covet it as we may, must perforce be content to consult in the unsympathetic atmosphere of a public library. Now, in the compass of some two thousand five hundred quarto pages we have, issued at a comparatively modest price, a work which exhibits most of those features which have made the “Oxford” the most famous of all dictionaries.

The qualities which the plain man will seek in this “Shorter Dictionary” are best summarised in the heads of the information given in any one article. The word under consideration, marked when necessary by symbols which indicate something of its status, is followed by the pronunciation and the notation of the part of speech. Then follows a word indicating, if necessary, more detail of its status—*slang*, *dialect*, *colloquial* and so forth. Variant spellings and inflexional forms are next indicated, and then follows one of the most important features of the article, a feature which must have occasioned an immense amount of research—a statement of the earliest appearance of the word, given by means of a precise date if the appearance of the word is later than 1450. Then follow the etymology, the specification of the word as belonging to some art or science, the various meanings, with the date of their first appearance, or if they are obsolete, with the date of their disappearance, illustrative quotations, and groups of idiomatic phrases and usages.

Even this arid specification of the information afforded in each of the scores of thousands of articles which go to make up this “Shorter Dictionary” cannot conceal the immense mass of literary, scientific, artistic and philological information which is brought together in these massive volumes. The most uninspired searcher therein must sense something of the romance of words when he traces, in the matter of fact record, the wanderings of *apricot* from Portuguese *albricoque* through Arabic to Greek *πραϊκόκιον* adapted from Latin *praecoquum* a variant of *praecox*, and so the *early ripened fruit*. What stories of mutability, of chops and changes of meaning and popularity, are concealed behind the dates which tell us something of a word's birth and death! This, one of the dictionary's most valuable features,

could be made still more valuable by small additions which in the aggregate would not add appreciably to the size of the work. Take a case in point. Some little time ago the problem was posed—at what period did the word *tension*, in the incorrect usage *vapour tension*, enter the literature of science? The “Shorter Dictionary” solves the problem in the entry (*s.v. tension*), “Inexactly used for the expansive force of a gas or vapour, properly called *pressure* 1678.” Now, it would be too much to expect to find in a dictionary which, large as it is, is but an epitome, a full reference to the work in which the usage is first exemplified. But is it too much to ask that the name of the *author* of the work in question, may be added in brackets to all such dates? This would increase the volume of the work inappreciably and the name would form a pointer amply exact for those interested in any special word.

On the science side, one or two of the dates given would seem to be later than is warranted by the usage of the word. Thus the noun *resistance* in the sense of “a part of an electrical apparatus used to offer a definite resistance to a current, 1878” is surely dated far too late. The concept and the word are freely scattered through Wheatstone’s Bakerian lecture of 1843, where we find, *ex. gr.*, “in two circuits . . . when the same resistance is introduced, the strength of the two currents may be weakened in very different proportions.” It may be mentioned in passing that Wheatstone, in this lecture, defines and discusses the introduction of terms such as *rheomotor*, *rheometer*, *rheotome*, *rheotrope*, *rheoscope* and *rheostat*. Of these terms only the last-named is in common use to-day. They are all duly tabulated in the dictionary but without any indication of the date of their introduction. Again, the word *Geordie* is entered as “Miner’s name for George Stephenson’s safety lamp 1881”, a date which is surely more than half a century in error. The word has either been noted in some centenary volume (Stephenson was born in 1781), or maybe 1881 is a misprint for 1818. The lamp was invented in 1815, and a description of it under the name *Geordy lamp* is to be found in editions of Smiles’ *Life of Stephenson* published in the ‘fifties of last century.

That the words of our great heritage, our literature, are exhaustively explained, and exemplified by most skilfully chosen illustrative quotations, need scarcely be said. The editor modestly hopes that the dictionary “may be found acceptable as a lexical reading companion to English literature.” It is much more. In this respect it is a treasure-house of English usage the value of which to the reader increases as knowledge of its contents grows. Equally valuable is it in its illustration of colloquial usage. How far one may expect such a dictionary to assist the connoisseur of dialect, of argot, or of slang, is a moot point. Certainly the present dictionary gives far more assistance than one would have expected from a

comparison of its scope with that of the parent dictionary. Would you widen your knowledge of Corinthian or sporting argot, of the cant and slang patter either of St. James’s or St. Giles’s? If you are not awake, or fly, you have little need to take your degrees under the celebrated Captain Grose—the editors are as skilful professors of the flash as ever was Bob Logic. Back-slang is defined and, quite properly, only slightly exemplified—he who would know the back slang for *hippopotamus*, may excogitate *summatopopy* for himself; but it is odd to find Winchester *notions* unnoted. In the matter of dialect the present writer was *glorified* to see that his own dialect of Lancashire was well represented by many common, rare and obsolescent words—even though some of those words were lacking which, living in the songs of Waugh, Brierley and Laycock, have become part and parcel of northern literature. These omissions are striking in the Scots dialect. We must be grateful to the editors for giving us what they have done—the Southron, fortified with this dictionary, may read his Scott with as much ease and pleasure as his fundamental ignorance of the language will permit—this dictionary will find for him the equivalent of most of Scott’s dialect speech.

Surely, however, Burns deserves similar consideration; every word that he wrote should be found and explained in a dictionary which admits so many and so varied words in Lowland Scots as are to be found in the “Shorter Dictionary”. We should scarcely expect the dictionary to give a great deal of assistance in the deciphering of that letter written by George Outram in 1844, inviting critics of the Treaty of Union with England to a once-famous dinner at which they might discuss the “cassin o’ the wanchancie Covenant”, and, the better to do so should “subsist upon our ain national vivers allenarlie, and sae pruiue how far we can forega the aids o’ foreign countries in respect of our creature comforts, . . . whiles pangin oursels wi’ haggis and brose, an’ whiles wi’ sheep’s head an’ partan pies, rizzard haddies, crappit heads an’ scate-rumples, nowtes’ feet, kebbucks, scadlips, an’ skink, forbye custocks, carlings, rifarts an’ syboes, farls, fadges an’ bannoeks, drammock, brochan an’ powsowdie an’ siklike—washin’ the same doun our craigs wi’ nae foreign pushion—but anerlie wi’ our ain reamin yill an’ bellin usquebaugh.” Here, indeed, the dictionary gives more help than we could hope for, elucidating, as it does, some two-thirds of the dialect words in this passage.

But the Doric of Burns is literature; it is not esoteric and his Southron readers have just cause for a mild grumble when they find

“Ye Maukins, cock your fud fu’ brow,”

duly explained, and

“If on a beastie I can speel
Or hurl in a cartie”

left hidden in a Scottish mist.

Why, in

"She tauld thee weel thou wast a skellum
A bletherin', blusterin' drunken blellum,"

should *skellum* be explained, and *blellum* left?

Perhaps these insertions and omissions are determined by considerations of etymological interest, and it is assumed that, for the mere purpose of translation, the English reader must equip himself with an edition of Burns which boasts a glossary.

It must, however, be emphasised that these omissions are relatively of very small importance, and indeed they are to some extent matters of taste which may well be left to the judgment of the editor. To readers of NATURE the assistance that the dictionary affords in elucidating and dating scientific terms is a matter of very special interest and here we have to chronicle a number of very curious omissions which indicate that the dictionary is some years behind the science of the twentieth century. To direct attention to omissions is a thankless task; it tends to discount in the reader's mind the gratitude which the critic feels for the impressive amount of positive scientific information which the dictionary certainly does furnish; and I can only say that I have endeavoured, in selecting what can be, at best, but a few samples, to make my sampling process as fair as may be. The scientific terms of the science of the nineteenth century (and earlier) are analysed and dated with impressive and exact scholarship; but there are a number of important omissions to be chronicled when we come to deal with the events of the last quarter of a century or so. Maybe this is in the nature of the case; for it is obviously difficult to keep up to date all parts of an immense work which has to be set up in alphabetical order.

Another clue to these omissions may be found in the fact, chronicled in the preface, that Mr. Wm. Little, who was originally responsible for the abridgment, worked on it steadily from 1903 until his death in 1922, when "he had prepared entirely without assistance the manuscript for the letters A to T and V, and had passed for printing about one-third of the whole dictionary." Much has happened since 1922.

Let us make a few tests, giving to the results of our search neither more nor less weight than such a restricted sampling merits. We shall seek neither recondite nor highly-specialised terms, but confine our attention to words and phrases which have been lately in common use. *Resistance*, as we have seen, is present. *Induction*, and derived phrases, are illustrated very completely; *inductance*, *capacity* and *capacitance* (all in the electrical sense) are absent. *Proton* is present, and wrongly defined as "the positive charge of an atom"; *photon* and *alpha-particle* are missing. *Specific*, *atomic* and *molecular heats* are defined; *specific inductive capacity* is omitted. The introduction of the word *relativity* is referred to 1919, and the dictionary

apparently knows no distinction between *special* and *general relativity*. Despite the fact that a journal of *rheology* has been in circulation for some years, the word finds no mention here. *Choke-* or *choking-coils* are unknown. *Ampère*, *Ohm*, *Coulomb* and *Gauss*, as giving their names to well-known units, are represented; *Maxwell*, *Gilbert* and *Oersted* are not. In photometry the *lumen* is defined; the *lux* is not. *Quantum* is defined; allied words in common use, such as *quantize* and *quantization*, are not entered. The dictionary is rich in brief phrases—*periodic law*, for example, is carefully defined; we search in vain for *correspondence principle*, *uncertainty principle* and *exclusion principle*. *Virial* and *ergal*, the bounding brothers of Bonn, are represented by *virial*, bereft of his twin.

In the biological sciences, such important words as *gene*, *zymase*, and—most remarkable of all—*enzyme*, are left unmentioned. In the science of psychology, while *psycho-analysis* is clearly defined, *sublimation*, in its strict psychological sense, is unnoticed, as is *super-ego*; *id* is defined in its biological sense, receiving no notice as a psychological term. We are introduced to old *buffers* and to railway *buffers*, but a *buffer solution* is left unexplained, and the reader who seeks an explanation of the mystic term *pH*, may seek in vain. *Solute*, as a noun substantive, is overlooked. The general reader might reasonably expect to find *holism* defined—Smuts's book was published seven years ago—but the word is absent. Discoveries associated with the names of the discoverer are apparently entered under the heading of the common noun. Thus under *law* we find Avogadro's Law, Boyle's Law, Charles' Law and so forth mentioned, but not quantitatively defined. The practice is apparently not consistent. Under *Joule* we find a cross-reference to *equivalent*, and there we find *mechanical equivalent of heat* quantitatively defined, without any reference to Joule. *Young's modulus*, surely as important and as common-place as Joule's equivalent, finds no mention here; neither does *Planck's constant*. It would immensely enhance the value of the dictionary to the student were such phrases entered as articles under the names of their discoverers, defined quantitatively and dated.

Most technical terms have to-day passed into print in some form or other. We can scarcely say, as Johnson did, that "I could not visit caverns to learn the miner's language, nor take a voyage to perfect my skill in the dialect of navigation, nor visit the warehouses of merchants, and shops of artificers to gain the names of wares, tools and operations, of which no mention is found in books; what favourable accident, or easy inquiry brought within my reach, has not been neglected; but it had been a hopeless labour to glean up words, by courting living information, and contesting with the sullenness of one, and the roughness of another." Even so, there are many scientific and technical terms so specialised in use, that it would be most undesirable to attempt to include

them in a dictionary designed for everyday use. Still, the terms on omission of which we have commented are important and in common use, and it is deeply to be desired that in future editions this side of the dictionary will be thoroughly overhauled.

The value of this dictionary is not to be gauged in terms of the three guineas of its price. *Words are the counters of wise men and the money of fools*; and the world would be saved much trouble and strife if its inhabitants were only more skilled in the use of these counters. To the increase of that skill our new dictionary is destined to contribute even more largely than the parent lexicon,

and the perfecting of this instrument, already most valuable, is a matter of immediate concern to all. Such alterations and additions as may be necessary to be made deal merely with matters of detail; and even as a Lover of the Arts said of that Compleat Dictionary printed at Cambridge by John Field in 1667, so we may heartily recommend this product of twentieth century erudition to "*those vertuous and well-addicted Persons who . . . have here a volume fit for their purpose, as carefully designed for their assistance: and to such, and onely such, we recommend it, and that with this Benediction, Live long, industrious Reader, advance in Knowledge, and be happy.*"

Deep-Sea Angler Fishes

THERE still remains a large field for the discovery of new forms of animal life in the deeper layers of the ocean water masses. There, pelagic life is not concentrated at one level, but has a vertical range of many hundreds of metres in which to roam as well as thousands of square miles horizontally. The larger animals thus tend to become comparatively sparsely distributed. To sample this deep-living population, great quantities of water must be filtered, and it is only to be expected that the recent introduction of large pelagic nets would bring a considerable extension to our knowledge. Perhaps nowhere is this better emphasised than in the study of the deep-sea angler fishes of the sub-order Ceratioidea; as a result of the examination of the collection of these fishes made on the world voyage of the *Dana* in 1928-30 under the late Prof. Johannes Schmidt, our knowledge has been amplified and brought up to date by Dr. C. Tate Regan and Miss Ethelwynn Trewavas*.

Although a systematic revision of the group was made by Dr. Tate Regan in 1926, the addition of new species and collection of new specimens has been so great that the authors have found it necessary to make a further revision. In the former report the number of species was 60 while now 158 species are recognised. Previous collections had consisted, to a considerable extent, of specimens less than one inch in length which had been assigned to those known species which they most nearly resembled; it is now shown that, among the Oneirodidae, the adult characters may be assumed at a very small size.

The Ceratioids have recently become known in the zoological world on account of the discovery, on the females of certain species, of dwarfed parasitic males the bodies of which had become fused to that of the female at an early stage. This was known in the four families, Ceratias, Photocorynus, Edriolychnus, and Caulophryne. The same habit has now been shown to occur also in the families Borophryne and

Linophryne; the authors also say that the continuity of the blood systems of the male and female has been proved in Edriolychnus.

As only females of the solitary adult type had been found in previous collections, it was thought that perhaps the habit of parasitisation by the males was of general occurrence throughout the sub-order. In 1930, however, Parr recorded the discovery of a free-living male (*Rhyncoceratias longipinnis*) with a well-developed testis. In the report before us it is now shown also that the males are not parasitic in the Melanocetidae, Himantolophidae, and Oneirodidae. They are small free-swimming fish which show considerable structural differences from the females. They have no illicium, have large olfactory organs, and except in two naked species, the skin is spinulose.

Typically the female ceratioids have large mouths, strong teeth and very distensible stomachs; they are solitary and inactive and by means of their luminous lures (the illicium) they attract prey often larger than themselves. The males have small mouths and stomachs and probably swim actively in search of their prey and of their mates. It is thought that the females most nearly retain the structure and habits of the original members of the group, since they possess the illicium so characteristic of angler fishes. They appear normally to inhabit the layers of the ocean at 500-2000 m. depth and are most abundant in warmer parts of the ocean. The comparison of ceratioids from the Panama region with those of other regions of the Pacific needs further study.

A section of the report is devoted to the osteology and classification of the sub-order. The most important structures for diagnosing the families are, the structure of the fins, form of the hyomandibular, number of branchiostegals, number of pectoral radials, and presence or absence of pelvic bones. The last and greater part of the report is taken up with the systematic revision. The volume contains also ten plates of illustrations of 22 species by Lieut.-Col. W. P. C. Tenison, which emphasise how effective stippling can be in the representation of solid form, where the expense of reproduction of wash drawing seems unnecessary. F. S. R.

* The Carlsberg Foundation's Oceanographical Expedition round the World, 1928-30. Report No. 2: Deep-Sea Angler-Fishes (*Ceratioidea*). By Dr. C. Tate Regan and Ethelwynn Trewavas. (Published by the Carlsberg Foundation.) Pp. 113+10 plates. (Copenhagen: C. A. Reitzels Forlag; London: Oxford University Press, 1932.) 15s. net.