also is the adaptability of these cabinets to otherwise unused space in the laboratory or office. They may be placed flat against the wall (and stacked one upon another in tiers) or at the ends of desks, tables, etc. Use of these cabinets likewise eliminates the necessity of shelving, and thus an empty room may be converted to a reprint file room without expensive carpenter work. The flexibility of the system allows the addition of small units as needed or budget may permit. In the event the collection requires moving it is an easy task to crate the individual cabinets; this also spares one of the unwelcome task of sorting and filing following the move.

The author prefers a subject filing system to an alphabetical author listing, since the material is of most value when thought of in relation to subject. Such a file (for example, a departmental collection) is then of value to graduate students or others who know the subject upon which they seek information but who, as yet, may be unfamiliar with the various authors. In my collection all reprints are marked by me in the upper right-hand corner in red ink to indicate the subject, thus permitting secretarial or other aid in filing. A typed list, which is posted, indicates the scope of each section, and thus the collection is available to others without my aid. With the modern trend to research by projects involving several persons rather than the isolated individual the need becomes emphasized of a single large file useful to the group.

In many instances (for example, reports relating to physiology, serology, taxonomy, etc.) there may be too many reprints relating to a certain subject to form a workable unit. For these a series of drawers is devoted to subdivisions of the larger topic which in the case of "physiology" include carbohydrate metabolism, nitrogen metabolism, lipolysis, effect of environment on microorganisms, etc. With the aid of a card file there is no worry that a reprint which relates directly to two or more subjects may be "lost" in the file since additional cards may be entered in the various subject divisions with each of the cards marked to indicate the placing of the reprint in the file. Since the card file contains countless references from the original literature and abstract sources those cards for which a reprint is available are so marked. The author has found no value in an alphabetical author listing of the reprints for general use, though perhaps such a compilation might be desirable for library holdings of a gift collection.

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PER CENT.

IF instructions in an original paper or a laboratory text-book call for, say, a 40 per cent. aqueous solution of caustic soda, it is probable that what is required is a solution containing 40 g of NaOH per 100 cc of solution, which is actually a solution containing about 30 per cent. NaOH by weight. Less probably, 40 g in 100 cc of water is actually meant, that is 28.6 per cent. by weight. Just possibly the author may really mean 40 per cent., that is, 40 g NaOH dissolved in 60 g of water. But, in general, no indication is given as to what is meant. There is often similar ambiguity in instructions for preparing mixtures of fluids when concentrations are stated as volumes per cent. With concentrations up to about 10 per cent., when accuracy is not required, the ambiguity is not important, but with stronger solutions misunderstanding may be critical.

It may be claimed that the custom of using the term "per cent." for grams or volumes per 100 cc solution is so well established in American scientific literature that nobody would be misled by it. However, the writer has been misled at times and the custom is confusing since it is not universally followed. For instance, bottles of concentrated hydrochloric acid are labeled with the specific gravity and the percentage acid, the percentage being given in the correct sense, that is, in grams acid per 100 grams of solution. The "Handbook of Physics and Chemistry" uses "per cent." only in the correct sense and uses specific statements for the other senses, see, *e.g.*, "Tables of Specific Gravity of Aqueous Solutions" and "Tables of Physical Constants of Compounds."

The incorrect use of "per cent." seems to be largely confined to writers in biological sciences, but there is no reason why workers in these fields should be content to use slipshod terms. I would like to recommend that authors, when stating concentrations of solutions, should indicate exactly what is meant, by using unambiguous expressions such as n g per 100 cc solution, of n g per 100 cc solvent, or n g in m cc solvent.

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SPECIAL CORRESPONDENCE

THE BRITISH GRAHAM LAND EXPEDITION, 1934–37

THE Graham Land Expedition was primarily engaged in survey work on the west coast of Graham Land and the adjacent islands, in the Falkland Island Dependencies, Antarctica. Advantage was taken of the exceptional opportunities for zoological research, and the resulting reports are being published by the British Museum. The following, dated August to October, 1940, have come to hand:

Vol. 1, No. 1, pp. 1–139. G. C. L. Bertram. "The Biology of the Weddell and Crabeater Seals."

Vol. 1, No. 2, pp. 141–194. Brian Roberts. "The Life Cycle of Wilson's Petrel."

Vol. 1, No. 3, pp. 195–254. Brian Roberts. "The Breeding Behavior of Penguins."

Vol. 1, No. 4, pp. 255–294. S. M. Manton (Mrs. J. P. Harding). "On Two New Species of the Hydroid Myriothela."

Vol. 1, No. 5, pp. 295–318. Theresa Clay. "Anoplura."

The reports are beautifully printed, but a good deal of space could have been saved by a different arrangement of the text, while the very wide margins are undesirable from any point of view, and especially now that there is a shortage of paper. There are four species of Antarctic seals, the Weddell and Crabeater being the most abundant, the former being a species of the coasts and inshore waters, the latter of the pack ice. The Crabeater has a misleading name, as its food is Euphausiid Crustacea, shrimp-like creatures of the plankton. Perhaps Floe-seal would be a better name, though the scientific name *Lobodon carcinophagus* can not be altered. During the course of the expedition it was necessary to kill 558 seals to provide food for 16 men and about 80 dogs. Dr. Bertram took every opportunity of doing the actual killing and butchering himself, in order to obtain the desirable records from each specimen. The records thus obtained, together with the concurrent observations of the living animals, give us an account of the biology of these seals which leaves little to be desired, and to this is appended a discussion of the behavior of the thirty living Pinnipedia of the world.

Wilson's petrel, which breeds in the Antarctic, is discussed at length by Dr. Roberts. Summing up, he says that the migration of this bird is one of the longest and perhaps the most remarkable of any bird known. In a straight line the Atlantic migration is about 7,000 miles in each direction yet the flight throughout is indirect and quite unlike that of land birds crossing the sea. For the greater part of eight months of the year most of them probably never come within sight of a landmark, yet they return at almost the same date each year to the same burrow and mate. "Oceanic migration of this type provides a noteworthy example of powers of endurance, and it also raises the problem of orientation in its most difficult form. In view of such facts it is extraordinary that visual memory is still quoted as the most satisfactory explanation of the way in which birds orient themselves during migration."

Four subspecies of Wilson's petrel are recognized, but they are separated on average characters, so that individual birds taken on migration can not be referred to any particular race with confidence. Dr. Roberts says, "the division into four races may not be useful for museum purposes," but he feels that it is desirable to have names for the different populations, which, when studied on their breeding grounds, do show average differences. It is interesting to find that Euphausiid Crustacea are the food of Wilson petrel as well as the so-called Crabeater seal. The parent petrels regurgitate partly digested *Euphausia* for the chicks, "in the early stages this takes the form of a clear oil," but some of the chicks were found to contain almost complete *Euphausia*.

The bird lice found on the Wilson's petrels proved to belong to a new species, which is described by Miss T. Clay as *Naubates robertsi* in her report on the Anoplura.

There are seventeen living species of penguins, which Dr. Roberts arranges in six families, one for each genus, except that the Adélie penguin is put in the same family as *Pygoscelis*. The present account has special reference to the Gentoo penguin, *Pygoscelis papua*, and gives a minutely detailed account, with many illustrations.

The author concludes that "each characteristic behavior phase appears to have little meaning unless considered in relation to its place in the cycle as a whole. There is a chain of stereotyped behavior acts correlated with physiological processes which are all closely related to each other. Bird behavior must surely be explained partly in physiological and partly in psychological terms, for endless difficulties arise through investigating by either method alone." All of which may be applied to other creatures than birds.

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SCIENTIFIC BOOKS

HARMONIC INTEGRALS

The Theory and Applications of Harmonic Integrals. By W. V. D. HODGE. ix + 281 pp. Cambridge, England: Cambridge University Press; New York: Macmillan Company. 1941. $4.50.

THE author of this monograph is one of the outstanding geometers in England, and in his special field—algebraic geometry—he is known, above all, for his important contributions to the theory of algebraic integrals attached to an algebraic variety (*abelian integrals*). This theory, inaugurated by the classical investigations of Abel and Riemann on the integrals