storage and transport which have already assisted in improving the market condition of fruit, in minimizing wastage during long voyages from overseas, and in improving the handling and transport of white fish so that a larger proportion of the catch can now be landed and marketed fresh than was formerly possible in half the time. The importance of such work in establishing on a firm basis the struggling fishing industry of Great Britain is obvious, apart from its national and social aspect.

Investigations of this type, closely related as they are to the welfare of society, are frequently long-range investigations requiring close cooperation between a number of classes of scientific workers. Only administration capable of taking a long-range and scientific point of view is competent to secure the necessary continuity or coordination, and in few fields is definite planning more important. Problems of food production and preservation should be taken out of the arena of political prejudices and debate into an atmosphere of impartial scientific examination.—*Nature.*

# SCIENTIFIC BOOKS

*New General Catalogue of Double Stars within 120° of the North Pole.* By ROBERT GRANT AITKEN. Two volumes, pages i–lxviii, 1–1488. Carnegie Institution of Washington, 1932.

RARELY has any astronomical publication been so eagerly awaited by a considerable group of scientists as Aitken's new catalogue of double stars, and even more rarely has its appearance so justified every expectation. To say that its value is immense to every active observer or person interested in the theory of the subject is to put the truth mildly.

To those privileged to know R. G. Aitken personally, the ample and generous acknowledgment of the part taken in the inception of the work by the late Eric Doolittle comes as no surprise. As a model of paying tribute to a late colleague it can not be surpassed. In honoring the dead so fully, the author has honored himself.

He tells how Burnham, the author of the great B. G. C., in his last years turned over his data to Doolittle, who in turn tried to carry on the task, always overworking himself and later in failing health. Doolittle in turn made Aitken promise to carry the work to completion, should he have to give it up. His untimely death in 1920 brought this labor to Aitken sooner than the latter ever thought it could be, as Doolittle was not an elderly man at his death.

The work of bringing Doolittle's data up to date and keeping them so, and the untold labor of planning, arranging and preparing the great catalogue and carrying its publication to completion were all borne by Aitken, with able clerical assistance only.

The catalogue itself contains 17,180 doubles. Every double star north of declination −30° discovered and announced up to 1927 is included therein. It is true that most of the old faint Herschel and other similar "doubles" of 10″ and over, which cumbered the B. G. C. to the great handicap of its usefulness, are omitted. But as such "doubles" no longer come within the meaning of the term or have reasonable chance of physical connection, this omission is a vast improvement. Without repeating most of the observations listed in the B. G. C., the discovery measure and one other are usually given. Some measures made before 1905 which were not available to Burnham and all the measures since made up to 1927 then follow in order. The new catalogue becomes therefore both a supplement to and a new and improved edition of the B. G. C.

In the modern observations given as yearly means for single observers, or, in cases of many observers in one year, as combined weighted yearly means, every double star observer can see how his work compares with that of others. Needless to say, this information, never before available in such generous quantity to astronomers of this generation, should be of real value to every one and make the determination of constant differences at last a possibility. Having everything necessary for one star on one page, instead of having to consult two volumes, is also a great convenience. A really useful observing list can now be prepared without weeks of hard labor, as it is easy to see what stars stand in need of more measures. Useless duplication can easily be avoided.

The reviewer has not actually used the tabular matter as yet, so has had little chance to find typographical errors, if such exist. The only thing that has occurred to him as a possible improvement is the insertion of some appropriate letter or symbol to indicate those observations made by photography. While the reviewer is one of the persistent advocates of the accuracy of photographic measures of doubles when they are made on plates taken with refractors of long focus, he has little faith in those made with the astrographic telescopes or others of short focal length, if the doubles are under 5″. As measures on such plates occur in considerable numbers, and also as some observers have published both visual and photographic results, it would have been a help to

be able to differentiate one class from the other without consulting the original sources.

The catalogue is a work which deserves the highest praise. It is compiled by the foremost double star observer of all time, and will be invaluable to every one interested in this branch of astronomy for the indefinite future. The printing is clear and the size of the type good. The two volumes in which it is contained are of equal size and will be most convenient to handle. The Carnegie Institution is to be congratulated on their wisdom in assuming the financial burden of its publication.

CHAS. P. OLIVIER

FLOWER OBSERVATORY,
UNIVERSITY OF PENNSYLVANIA

*Life-Histories of the Frogs of Okefinokee Swamp, Georgia. North American Salientia (Anura) No. 2.* BY ALBERT HAZEN WRIGHT. The Macmillan Company, New York. xv–497 pp., 45 plates, $8.00. 1931.

DR. WRIGHT, in his well-known first book (1914) on the North American frogs, gave us detailed life histories of the eight forms common at Ithaca, N. Y. In this second and larger work, he adds the life histories of sixteen Southeastern species and one Northern one. The headings for each species indicate the scope of the treatment: scientific name, common name, range, general appearance, measurements, habitat, first appearance, general habits, voice, mating, ovulation, eggs, hatching period, mature tadpole, larval period, transformation growth, food, autumnal disappearance, affinities, bibliography.

The treatment, for the species studied, is all that can be desired. In especial, commendation is due for the method of quoting all the previous statements about each form, so that this book contains all the scattered information (sometimes somewhat contradictory) about each form. Naturally, more recent observations have more weight, yet it is not necessary to go beyond the pages of Dr. Wright's book to see what the older naturalists said, since he has included their remarks. To some this may seem a defect, as early observations are given the same apparent weight as later ones, yet to the reviewer it seems the only proper way of reporting habits.

Dr. Wright has laid himself open to criticism from certain quarters on account of his extreme conservatism in regard to matters strictly taxonomic. He undoubtedly knows more about these frogs than any one else. Why, then, has he not made more definite pronunciamentos as to affinities, synonyms, etc.? The reviewer thinks that the answer is clear, and also thinks Dr. Wright should be complimented rather than blamed for this apparent omission. The title of the work is "Life-Histories." Dr. Wright has chosen to do life-history work, and he has done it extraordinarily well. To criticize his work because he did not do a quite different piece of work, is, to the reviewer's mind, uncalled for and unjust. There are more good systematists in this country than there are good workers on life histories, and while the present work is not a systematic treatise, it doesn't pretend to be, and that is one of its chief virtues.

The title is slightly misleading. While most of the species are from the Okefinokee, *Rana sphenocephala* is not, yet no one will quarrel with its inclusion. *Hyla versicolor* and *Rana clamitans* were treated in his work on Ithacan species, yet they are definite Okefinokee forms.

The life-histories of *Pseudacris nigrita, P. ornata* and *P. occidentalis* are really not given with anything like the completeness of the other species included. Since his Ithacan paper only briefly touched on a northern Pseudacris, there is a big gap in eastern frog life-histories to be filled, the only well-known one being *P. ocularis,* which Dr. Wright has treated exhaustively in this paper.

Pseudacris aside, there remain from the eastern region the following frogs whose life-histories are relatively unknown, or at least not described with the wealth of detail and the accuracy given by Dr. Wright: *Scaphiopus holbrookii albus, Bufo fowleri, Eleutherodactylus ricordii, Hyla cinerea evittata, Hyla avivoca* and *Acris crepitans.* These with the various Pseudacris are mostly rare, local or problematical forms.

One hopes that Dr. Wright will eventually deal with these with the same care and skill with which he and he alone (save for *Hyla andersonii*) has made us acquainted with the life-histories of the other eastern forms.

E. R. DUNN

HAVERFORD COLLEGE

# SCIENTIFIC APPARATUS AND LABORATORY METHODS

## A DEVICE FOR FOCUSSING THE DISSECTING MICROSCOPE WITH THE FOOT

EVERY one who has done much work with a dissecting microscope has doubtless felt the need of a third hand for use in focussing as the object under dissection sinks down or springs up. A good hold on an elusive object often must be relinquished to enable one to focus on the object, which may be pushed out of focus again when work is begun on it.

For some years I have been urging on various