The Relations of Mollusks to Fish in Oneida Lake. By Frank Collins Baker. Technical Publication No. 4, New York State College of Forestry at Syracuse University. Pp. 366.

The New York College of Forestry, under the leadership of Dr. Hugh P. Baker, takes a broad view of the subject in including not only the waters conserved by the forests, but also their animal life and economic resources. The present volume is concerned primarily with the molluscan food of fish, but a large part of it discusses the relations of mollusks to the rest of the fauna and the flora, the distribution and associations of species and other topics interesting to zoologists concerning themselves with fresh-water faunas.

It appears that mollusks form 31.5 per cent. of the food of 25 of the most important food and game fishes of the state. About half of the species of fish found in Oneida Lake are in some degree mollusk feeders. The fauna of the lake comprises upwards of 62 species and varieties of shellfish, nearly all of which are known to contribute to the piscine menu, but in varying degree. The little clams of the family Sphæriidæ appear to be a favorite article of diet, also such diminutive gastropods as *Valvata* and *Amnicola,* as well as the larger *Physa* and *Planorbis,* all these appearing in the food lists of many species. The large mussels, Unionidæ, are used by a smaller number of fishes. The whitefish, catfishes and pumpkinhead are notable for the large number of species of mollusks eaten.

The areas rich in life are confined to the shallows along the shores, usually not exceeding three fourths of a mile wide and twelve feet deep, affording an area of approximately 8,343 acres for feeding and breeding grounds for fish. In deeper water, vegetation is scarce or absent, and only scattered individuals of three species of mussels were taken with the crowfoot dredge. Possibly the total absence of gastropods was due to the form of dredge used; yet the same poverty of deep water was noted by Miss Maury in Cayuga Lake. It seems likely that the mollusks of these post-glacial lakes have not had time to become adapted to deep water conditions, as they have in the Swiss lakes and many other bodies of fresh water.

No general valuation of the total molluscan fish food of the lake is attempted, but there are some interesting estimates of limited areas, from counts made of selected plots of a foot square. A bowldery station 300×500 feet has a mollusk population of 7,650,000 individuals. On a sandy bottom area $1,000 \times 500$ feet the counts indicated 65 million. Finally, in the outlet, where there is a uniform area of fully $3,500 \times 500$ feet, there are estimated to be 304½ million mollusks.

The chief species are illustrated by photographic figures. Mr. Baker's work is well done, as we should expect from his long experience with freshwater mollusks, and his excellent volume on the North American Lymnæas. The book will be found a useful addition to the literature of freshwater zoology.

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SPECIAL ARTICLES

THE OVERLAPPING OF THE LEAF SHEATH AND ITS LACK OF VALUE FOR DESCRIPTIVE BOTANICAL LITERATURE

During the crop season of 1916 the writers grew, at Texas Substation No. 8, Lubbock, Texas, uniformly tall and dwarf plants of milo from the same seed, by varying the time of planting and the environmental conditions. Measurements were secured from both the tall and the dwarf plats, by taking ten consecutive main plants in an average row and recording the internode and sheath lengths. The total number of internode and sheath measurements amounted to 78 in the tall group and 93 in the dwarf group. The results showed the mean internode length in the tall group to be 13.33 $\pm$ .061 centimeters, as against a mean internode length in the dwarf group of 6.88 $\pm$ .048 centimeters. The mean sheath length was 17.46 $\pm$ .050 centimeters in the tall and 15.95 $\pm$ .026 centimeters in the dwarf.

Tall and dwarf plats of kafir were also grown from the same seed and a similar set of measurements, totaling 106 in the tall and 100 in

the dwarf, recorded in each case. The results in the case of kafir showed a mean internode length of 12.00 ± 3.599 centimeters in the tall group, as compared with a mean internode length of $6.89 \pm .532$ centimeters in the dwarf group. The mean sheath length in the tall group was 18.01 ± 3.81 centimeters and in the dwarf group $18.02 \pm .322$ centimeters.

It is seen that in both milo and kafir the internode length varies widely when the plant is grown under different environmental conditions, but that little variation has occurred in the length of the sheath.

From these data it would seem that overlapping of the leaf sheath may show wide variation in other Gramineæ in the same variety and plant from year to year, depending on environment, and that a statement of the overlap of sheath in descriptive botanical literature is of doubtful value.

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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

REPORT OF THE TREASURER FOR 1916

IN compliance with Article 15 of the constitution, and by direction of the council, the treasurer has the honor to submit the following report showing receipts, disbursements and disposition of funds and securities of the association for the year 1916 up to December 20, inclusive.

Receipts have come into the keeping of the treasurer from the following sources:

(*a*) From interest on deposits with the United States Trust Company of New York, N. Y.
(*b*) From the executor of the estate of Richard T. Colburn.
(*c*) From interest on securities purchased for the association during the year.

The total of cash receipts during the year is $54,760.24; and the appraised value of the securities received from the Colburn estate is $25,740. The grand total of cash receipts and appraised value of securities received is $80,500.24.

Disbursements made in accordance with directions of the council amount in the aggregate to $77,027.87. These include $75,733.98 paid for $80,000 worth, par value, of securities purchased for the association and held as an investment.

The total amount of funds of the association, consisting of cash, cost value of securities purchased and appraised value of securities received from the Colburn estate, is $109,151.21.

The details of receipts, disbursements and disposition of funds are shown in the following itemized statement:

BALANCE SHEET

Assets

Investments:	
Securities (see schedule, page 146)	$100,777.50
Cash in banks	8,373.71
	$109,151.21

Liabilities

Life-members (284 at $50)	$14,200.00
Jane Smith Fund	5,000.00
Colburn Fund	77,755.74
	$96,955.74
Accrued surplus	$12,195.47
	$109,151.21

The Treasurer in Account with the American Association for the Advancement of Science

Dr.

1916		
Jan. 1.	Balance from last account	$30,641.34
Feb. 4.	Cash from Colburn estate	51,265.74
Feb. 4.	Bonds from the Colburn estate (appraised value)	25,740.00
May 6.	Cash from Colburn estate	750.00
July 1.	Interest from United States Trust Company	764.50
	Interest on securities for the year	1,980.00
		$111,141.58

The Treasurer in Account with the American Association for the Advancement of Science

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1916			
Feb. 4.	Bonds from Colburn estate (appraised value)		$25,740.00
Apr. 26.	Amount paid permanent secretary for two life memberships under Jane M. Smith Fund		100.00
Apr. 27.	Grant to Concilium Bibliographicum		250.00
Apr. 27.	Grant to Ralph C. Benedict.		100.00
Aug. 2.	Interest on life memberships for 1914 and 1915		793.89
Nov. 15.	Compensation paid United States Trust Company for services in purchase of bonds		50.00
Aug. 17.	Securities purchased, listed as follows:		
	$10,000 Chicago and Northwestern Railway Co. 4 per cent. bonds	$9,425.00	
	Accrued interest	102.22	