

prime of his life, when his ability was entirely obvious, James taught logic to beginners, extra courses in Radcliffe, and courses in summer schools!

EDWARD L. THORNDIKE

SPECIAL ARTICLES

NON-DISJUNCTION OF THE FOURTH CHROMOSOME OF DROSOPHILA

IN *Drosophila melanogaster* the gene for "eyeless" (e) and its normal allelomorph (E) are situated in the small fourth chromosome. Normal eye is dominant.

When heterozygous Ee normal flies are crossed with eyeless ee, a ratio of 1:1 is expected. Actually this ratio is approached, although the greater viability of the normal type modifies the ratio to approximately 1.3:1.

In a single mating of this sort a count of 171 normal to 206 eyeless was obtained. Breeding tests of the descendants of this mating indicate that in all probability non-disjunction of the fourth chromosome has taken place.

If an Ee fly formed non-disjunctive gametes Ee and—, the cross with an ee individual would give rise to Eee flies. Here two doses of "eyeless" meet one of "normal" eye. The opportunity is given for an upset in the balance of dominance between E and e. The excess of eyeless flies, mentioned above, suggests that such an upset has taken place. Further matings make it appear that the Eee form may be *either* normal or eyeless in appearance, certain individuals being extremely difficult to classify.

In the course of the breeding work several interesting results were obtained. Among these was the isolation of *eyeless* flies, theoretically of the formula Eee, which when crossed *inter se* or with other eyeless ee, gave *normal eyed* progeny in considerable numbers. Ratios of 8, 9, 10 or even 12 normals to 1 eyeless were also produced from matings presumably EEe × Ee. Both these conditions were expected on the hypothesis of non-disjunction.

Using the appearance of eyeless flies as a test, it seems that the mitosis of the Eee flies

is in the vast majority of cases, if not always, Ee and e; while similarly that of the EEe flies is Ee and E.

The variation in somatic appearance of the Eee form and the selective type of mitosis, referred to above, make it difficult to demonstrate genetically the presence of Eee individuals. If flies of this type have occurred their mitosis is commonly Ee and Ee. One mating only indicates a possible exception to this type of mitosis. This mating shows a peculiar ratio possibly due to the presence of eee eyeless forms.

A further detailed report of the work will shortly be published. I am greatly indebted to Dr. E. G. Anderson for helpful suggestions and discussion and to the Misses E. E. Jones and D. M. Newman for assistance in the laboratory.

C. C. LITTLE

COLD SPRING HARBOR, N. Y.,
January 6, 1921

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

REPORT OF THE TREASURER FOR 1920

IN conformity with Article 2, Section 6, of the By-Laws and by direction of the Council, the Treasurer has the honor to submit the following report for the period December 20, 1919, to December 23, 1920.

The total cash receipts during the period in question is \$13,096.05. These include \$4,381.21 from the W. Hudson Stephens estate; \$1,850 from 32 Life Membership commutations, and \$5,707.75 from interest on securities of the association.

The total disbursements made during the period in question amount to \$10,272.56. These include an aggregate of \$4,500 for 19 grants authorized by the council, and \$4,431.31 paid for \$4,500 face value Victory Loan 4½% bonds.

The total amount of funds of the association consisting of cost value of securities purchased, appraised value of securities received from the Colburn Estate, and cash in banks, is \$125,723.59.

A balance sheet, showing assets and liabilities, and tables showing details of receipts and disbursements, are appended hereto.

(Signed) ROBERT S. WOODWARD,

Treasurer

Dated December 23, 1920

BALANCE SHEET—DECEMBER 23, 1920

<i>Assets</i>	
<i>Investments:</i>	
Securities (Exhibit "A")	\$119,242.41
Cash in Banks	6,481.18
	<u>\$125,723.59</u>
<i>Liabilities</i>	
<i>Funds:</i>	
<i>Life Memberships:</i>	
345 at \$50	\$17,250
5 at \$100	500
	\$ 17,750.00
Jane M. Smith Fund	5,000.00
W. Hudson Stephens Fund	4,381.21
Colburn Fund	77,755.74
Accumulated Investments	14,355.46
Unappropriated Interest	6,481.18
	<u>\$125,723.59</u>

CASH STATEMENT

<i>Receipts</i>	
Dec. 23, 1920.	
Balance from last report	\$3,657.69
Interest from securities...\$5,707.75	
Interest from bank balance. 51.72	
Interest from R. M. Yerkes. 5.37	
Revertment of grant made	
R. M. Yerkes.....	100.00
10 Life Commutations, 1919	500.00
22 Life Commutations, 1920:	
17 at \$50	\$850
5 at \$100	500
	1,350.00
Sustaining member	1,000.00
Estate of W. H. Stephens. 4,381.21	13,096.05
	<u>\$16,753.74</u>

Disbursements

<i>Investments</i>	
\$ 100 U. S. First Liberty	
Loan 4%	\$91.25
\$4,500 U. S. Victory Loan	
Bonds 4½%:	
Purchase price. \$4,381.60	
Interest purchased	46.90
Commission ... 2.81	4,431.31
	\$ 4,522.56
<i>Grants:</i>	
Samuel D. Robins	100.00
S. Lefschetz	300.00
Olive C. Hazlett	100.00
A. A. Knowlton	200.00
John C. Shedd	100.00
Philip Fox	600.00
Anne S. Young	100.00
Frank B. Taylor	250.00

S. I. Kornhauser	250.00
P. W. Whiting	200.00
Donald Reddick, Chr.	500.00
Irving W. Bailey	500.00
Daniel W. La Rue	200.00
Margaret F. Washburn ..	200.00
Jos. Peterson	200.00
Asa A. Schaeffer	200.00
Theo Hough	100.00
Carl J. Wiggers	150.00
Ferdinand Canu	250.00
	4,500.00
<i>Interest on Life Membership</i>	
350 members at \$3	1,050.00
2 members (Jane M. Smith Fund).....	200.00
	1,250.00
<i>Cash in Banks</i>	
Fifth Avenue Bank.....	5,271.26
U. S. Trust Company....	1,209.92
	<u>6,481.18</u>
	<u>\$16,753.74</u>

I certify that I have audited the accounts of the Treasurer of the American Association for the Advancement of Science for the period December 20, 1919, to December 23, 1920; that the securities representing the investments of the association have been exhibited and verified; and that the income therefrom has been duly accounted for.

The financial statements accompanying the Treasurer's report are in accord with the books of the association and correctly summarize the accounts thereof

(Signed) HERBERT A. GILL,
Auditor

Dated December 23, 1920

At the autumn meeting of the executive committee of the council, held in New York on October 17, 1920, the following report was received and ordered to be printed in SCIENCE. It covers only a portion of the fiscal year on account of the fact that the records of the Permanent Secretary's office were turned over to the new Permanent Secretary on April 1, 1920. The former Permanent Secretary, Dr. L. O. Howard, presented his resignation at the St. Louis meeting, at which he was elected president for 1920 and 1921, but the new Permanent Secretary, Dr. Burton E. Livingston, did not assume his duties until February 1, 1920, and did not actually take charge of the accounts until April 1, 1920. During the interim Dr. Howard continued to care for the affairs of the association, and he has given much valuable advice and assistance to the new Permanent Secretary. Dr.

SCHEDULE OF SECURITIES

Securities Purchased

Par Value		Purchase Value
\$10,000	Chicago & Northwestern Railway Co. general mortgage 4 per cent. bonds, due 1987	\$9,425.00
10,000	Atchison, Topeka & Santa Fe Railway Co. general mortgage 4 per cent. bonds, due 1995	9,287.50
10,000	Great Northern Railway Co. first and refunding mortgage 4.25 per cent. bonds, due 1961	10,050.00
10,000	Pennsylvania Railroad Co. consolidated mortgage 4.5 per cent. bonds, due 1960	10,487.50
10,000	Chicago, Burlington & Quincy Railroad Co. general mortgage 4 per cent. bonds, due 1958	9,350.00
10,000	Union Pacific Railroad Co. first lien and refunding mortgage 4 per cent. bonds, due 2008	9,012.50
10,000	Northern Pacific Railway Co. prior lien railway and land grant 4 per cent. bonds, due 1997	9,187.50
10,000	New York Central and Hudson River Railroad Co. 3.5 per cent. bonds, due 1997	8,237.50
100	U. S. First Liberty Loan Bonds	91.25
8,000	U. S. Second Liberty Loan Bonds	8,000.00
2,000	U. S. Third Liberty Loan Bonds	2,000.00
2,000	U. S. Fourth Liberty Loan Bonds	2,000.00
6,500	U. S. Victory Liberty Loan Bonds	6,373.66
		\$93,502.41

Bonds from Colburn Estate

20,000	Acker, Merrill and Condit Co. debenture 6 per cent. bonds	\$13,600.00
7,000	Buffalo City Gas Co. First mortgage 5 per cent. bonds	1,540.00
8,000	Park and Tilford Co. sinking fund debenture 6 per cent. bonds	6,400.00
42,000	Pittsburgh, Shawmut & Northern Railroad first mortgage 4 per cent. bonds, due February 1, 1952	4,200.00
		25,740.00
\$171,000		<u>\$119,242.41</u>

Howard's audited report for the period mentioned follows.

BURTON E. LIVINGSTON,
Permanent Secretary

October 23, 1920

PERMANENT SECRETARY'S REPORT FOR THE PERIOD
NOVEMBER 1, 1919, TO MARCH 31, 1920

Dr.

To balance from last account	\$5,988.00
To receipts from members:	
Annual dues previous to 1919	\$119.00
Dues for 1919	237.00
Dues for 1920	36,367.50
Admission fees	725.00
Life membership fees...	1,150.00
Publications and misc. receipts	284.63
	38,883.13
	<u>\$44,872.03</u>
By publications:	
To publishers SCIENCE	\$8,909.16
By expenses St. Louis meeting:	
Secretaries (sectional and press)	\$709.26
Other meeting expenses..	328.02
	1,037.28
By office expenses:	
Salaries	2,461.02
Extra clerical help.....	1,233.42

Postage, telegraph, telephone and express	891.13
Addressograph supplies, etc.	397.45
Stationery, forms, cards, circulars, etc.	2,040.84
Overpaid dues returned ..	8.00
	7,031.86
By balance turned over to Burton E. Livingston, new Permanent Secretary	27,893.73
	<u>\$44,872.03</u>

L. O. HOWARD,
Permanent Secretary

I hereby certify that I have audited the foregoing accounts and find the same correct, and that proper vouchers covering disbursements were exhibited.

HERBERT A. GILL,
Auditor

WASHINGTON, D. C.,
October 12, 1920

FINANCIAL REPORT OF THE PERMANENT SECRETARY
FOR THE PARTIAL YEAR, APRIL 1, 1920, TO
SEPTEMBER 30, 1920¹

Burton E. Livingston, permanent secretary, in account with the American Association for the Advancement of Science.

¹ See the report of Dr. L. O. Howard for the period from November 1, 1919, to March 31, 1920.