

The number of periodicals and publications of societies received by the library in exchange for the *Journal* of the Institute, at the close of the year 1891 was 380.

Among the noteworthy additions made during the past year, there should be named the patent reports of Switzerland, a complete set of which was presented to the Institute by the Swiss Government, also a number of important chemical journals, contributed by the Chemical Section; while the increased income received from the Bloomfield H. Moore Fund has enabled the committee to increase considerably the number and value of its purchases from this endowment.

The committee finds that the regulations relating to the use of the library for reference by non-members, which were put in force in 1887, though imposing considerable extra labor upon the librarian and his assistants, afford a satisfactory solution of what, previous to that time, had been a troublesome problem. During the past year, only a single case was reported in which the privileges were abused. The value placed by the public upon the privileges granted, is shown by the fact that during the year, nearly 1,000 non-members visited the library, consulting over 4,250 books and periodicals, of which more than three-fourths were patent reports, and the remainder, volumes and pamphlets on miscellaneous subjects.

The committee regrets that the chronic difficulty of lack of space is felt with increasing severity, as time passes.

At the committee's urgent solicitation, the board has made provision for the better protection of the library from destruction by fire, by authorizing the covering of a number of exposed windows with fire-proof shutters, which will soon be put in place.

Respectfully submitted,

[SIGNED]

W. P. TATHAM,

*Chairman of Committee on the Library.*

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ANNUAL REPORT OF THE COMMITTEE ON SCIENCE AND THE ARTS.  
(For 1891.)

HALL OF THE INSTITUTE,

PHILADELPHIA, January 4, 1892.

*To the President and Members of the Franklin Institute:*

The chairman of the Committee on Science and the Arts respectfully submits the following report of the operation of the committee for the year ending December, 1891:

At the opening of this year, there were forty applications for examination under consideration and awaiting action.

The number of new applications received during the year is . . .	53
Of these there were accepted for examination and report, . . .	46
There were declined, . . . . .	5
And withdrawn, . . . . .	3
The number of reports considered was . . . . .	54

Adopted finally, . . . . .	41
Advisory reports adopted, . . . . .	3
Applications dismissed for insufficient information, . . . . .	9
Applications under consideration by sub-committee at end of year, . . . . .	40
Reports pending action of committee, . . . . .	8
The recommendations of award of medals during the year were:	
Of Elliott Cresson Medals, . . . . .	3
Of the John Scott Legacy medals and premiums, . . . . .	17
Medals granted and delivered during the year:	
Elliott Cresson Medals, . . . . .	3
John Scott Legacy Medals and Premiums, . . . . .	15
Edward Longstreth Medals, . . . . .	5
Certificates of Merit, . . . . .	2
Medals awarded and held pending advertisement:	
Elliott Cresson, . . . . .	2
John Scott Legacy, . . . . .	4

One protest against an award made by the committee has been received, which upon investigation did not appear to be sustained by evidence and was dismissed.

Several of the examinations made by the sub-committee during the past year embraced subjects of unusual interest and importance in the arts and involved in several cases a great deal of painstaking and exhaustive research, and more than usual expenditures in conducting them.

During this year a regulation has been operative requiring with each accepted application for examination the deposit of \$5 with the actuary to defray the cost of necessary printing and illustration and searches into the state of art as shown in patent records, which regulation has been cheerfully acquiesced in by the applicants, and has been found to facilitate the work of the sub-committee by avoiding the delays incident to procuring such assistance through a correspondence between sub-committees and applicants through the secretary.

The classification and indexing of reports has been continued to date, and the addition to the indices to reports will appear in the *Journal* in due course.

During the year the committee has completed the arrangements for tests of hot-water heaters, in prescribing appliances to be used and regulations to govern such tests, in compliance with the request of the publishers of the *Metal Worker*, and the making of such tests by the advanced students of the engineering classes of the University, under the supervision of a sub-committee, has been arranged by Prof. H. W. Spangler in a most satisfactory manner.

The receipts during the year from all sources were . . . . .	\$609 21
Expenditures, . . . . .	600 14
Showing a balance in the committee's favor, of . . . . .	\$9 07

The work of the committee has been a source of income from the profit of sales of extra editions of the *Journal* containing reports of the committee, which profits reappear in the receipts of the Committee on Publications.

The record of this year is, upon the whole, a satisfactory showing that the committee has fully worked up to the facilities afforded, and the character of inventions submitted for examination and the increasing demand for publications containing their reports clearly indicate public appreciation and approval.

[SIGNED]

S. LLOYD WIEGAND,

*Chairman.*

## REPORT OF THE CHEMICAL SECTION.

(For 1891.)

*Mr. Joseph M. Wilson, President Franklin Institute.*

SIR:—I have the honor to submit the following report of the proceedings of the Chemical Section, for the year 1891:

A consideration of the present condition of the section, and also of its history during the past year, shows that it has made very satisfactory progress for that interval. The work was prosecuted with the aid of the following officers:

<i>President,</i> . . . . .	DR. WM. H. WAHL.
<i>Vice-Presidents,</i> . . . . .	{ MR. H. PEMBERTON, Jr. DR. WM. H. GREENE.
<i>Secretary,</i> . . . . .	DR. WM. C. DAY.
<i>Treasurer,</i> . . . . .	DR. H. W. JAYNE.
<i>Conservator,</i> . . . . .	DR. WM. H. WAHL.

Stated meetings were held as required by the by-laws, on the third Tuesday of each month, excepting July and August.

*Membership:* The number of members on the treasurer's books at the beginning of the year was seventy-two; since that time twenty new members have been elected, eight have resigned, and two were dropped for non-payment of dues; this making a net gain of ten, or a total membership of eighty-two.

*Finances:* The report of the treasurer recently submitted to the Section shows that the total receipts from various sources during the year exceeded the expenditures, leaving a cash balance in the treasurer's hands at the close of the year.

The attendance upon the meetings has been satisfactory throughout the year, and fully equal to that of 1890.

The highest purpose that the section can serve is, of course, in its capacity as a medium for encouraging and stimulating original research among chemists. That this purpose has been promoted during the past year is well demonstrated by the fact that twenty-nine papers, giving the results of