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Article 5

1947

Reports - Executive Committee; Secretary; Treasurer; Staff Reports; Committee Reports

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Botany	R. V. Drexler.....	Cedar Rapids
Chemistry		
Inorganic and		
physical	Walter Edgell	Iowa City
Chemistry		
Organic and		
biological	Robert E. Buckles.....	Iowa City
Geology	A. K. Miller.....	Iowa City
Mathematics	H. P. Thielman.....	Ames
Physics	Frances Throw	Mt. Vernon
Psychology	C. R. Strother.....	Iowa City
Science Teaching	H. C. Trimble.....	Cedar Falls
Zoology	Mrs. Fae McClung	
	Shawhan	Des Moines

The nominating committee presented the following slate of officers for the year 1947-48:

President	J. Allen Baker.....	Indianola
Secretary-Treasurer	Cornelius Gouwens.....	Ames
Vice President	William Kadesch.....	Cedar Falls
Editor	F. G. Brooks.....	Mt. Vernon

Nominations were closed and these officers were declared elected.

President-elect, Dr. J. Allen Baker, then assumed the chair and with a word of appreciation declared the meeting adjourned.

Cornelius Gouwens,
Secretary-Treasurer.

Report of the Meeting of the Executive Committee

The Executive Committee meeting was held at 1:30 p. m. of April 18, 1947. The following members were present: Aikman, Baker, Bodine, Brooks, F. E. Brown, Getchell, Gilly, Gouwens.

The reports of the secretary, treasurer, auditing committee and the librarian were read and approved. Reports of standing committees were read by Gilly, Biological Survey; Aikman, Conservation; F. E. Brown, High School Relations; and Getchel, Membership. These reports were accepted and included a recommendation that we support the Junior Academy with a sum of money not to exceed seventy-five dollars.

It was moved and accepted that a sum of money not to exceed seventy-five dollars of the A.A.A.S. research grant be allotted to Professor S. W. Hockett for the purchase of equipment needed in his research in Iowa coals. This equipment is to become the property of Iowa Wesleyan College.

It was moved and passed that the new president appoint a committee to study means and the desirability of establishing a substantial prize for the best paper presented to the Academy at its annual meeting, if the best paper is such as to merit the prize.

The Executive Committee is very happy to receive the invitation from Parsons College for the Academy to meet with them in Fairfield next year.

Cornelius Gouwens,
Secretary-Treasurer.

Report of the Secretary

The Academy has come through the war period in a most excellent position. I am carrying a total of 684 names on the membership roll, namely, 1 Honorary, 3 Emeritus and 20 Life Fellows, 282 Fellows and 378 Associates. The dues are well paid up. Only a very few are delinquent.

A number of committee appointments were made during the year. Dr. E. R. Smith was appointed to the Library Committee, to serve for one year. Dr. Ben H. Petersen was appointed to the same library Committee to serve for two years. From now on each appointee shall serve for two years. Dr. W. A. Anderson was appointed Chairman of the Finance Committee to serve to 1950. Dr. H. Van Engen and Mr. Charles S. Trachsel were appointed to the Committee on the Certification of Science Teachers. Our Editor L. R. Wilson has left the state and although he will see the 1946 volume of the Proceedings through the press, Dr. F. G. Brooks was appointed to serve as Editor in the interim.

Letters were received from Senators Wilson and Hickenlooper acknowledging receipt of copies of our resolutions in support of the establishment of a National Science Foundation.

On authorization by the Academy, I sent a check for one hundred dollars to the building fund of the A.A.A.S. They acknowledged our gift with a most gracious letter of thanks along with public recognition of our gift in Science magazine.

Respectfully submitted,
Cornelius Gouwens, *Secretary.*

Dr. Joseph C. Gilman represented the Academy at the Academy Secretary's Conference in Boston. He presented the following summary of the conferences:

Report of the Academy Representative to the Boston Meeting of the A.A.A.S., Dec. 26-31, 1946.

The Academy Conference met in Boston December 27th, 1946, at 4:00 p. m. Discussion was made concerning the Academy grants. The question was raised as to whether in these times of inflated currency the size of the grant was adequate to stimulate research. It was the consensus that the grant should be used to entice supplementary funds from outside sources since the funds of the Association were

definitely limited. Successful use of this method was reported by the Virginia Academy.

The use of the Science Service Talent Search was also discussed. Several academies are setting up machinery to give the less successful candidates state awards.

It was suggested that some type of recognition be made to the sponsor. A certificate of merit was mentioned. The question of employment recognition by the school boards and superintendents was discussed. Time credit for conducting Science club projects was difficult to attain in certain school systems. The appointment of qualified teachers as science specialists to be responsible for science club work has solved the problem in some communities.

Stimulation of science fairs by local high schools was recommended. Such fairs focus community interest and help advance the whole program. They are often the preliminaries for the exhibits at the State Academy level and might well be used for selection to a national fair.

This latter has not as yet been established although club exhibits are now being made part of the Science Exhibit of the A.A.A.S. meeting.

Report of the Treasurer

March 1, 1947

Cash on hand March 1, 1946.....		\$ 972.01
Receipts		
Dues*	\$ 749.00	
Sales of Proceedings.....	113.91	
A.A.A.S. Research Grant.....	125.00	
Interest U. S. bonds.....	37.50	
	<u>\$1025.41</u>	
Total		\$1997.42
Disbursements		
Editor's office	\$ 17.71	
Secretary's office	17.60	
Stationery, printing	162.03	
Postage	110.53	
Bank charges	1.81	
To Savings Account	89.50	
Prairie Survey	20.92	
Joseph Gilman, Convention	40.99	
Carlyle Jacobsen, honorarium	50.00	
A.A.A.S. Building Fund	100.00	
L. R. Wilson, Editor	100.00	
D. C. Stroud, Jr., Acad. Sec.	25.00	
L. R. Wilson, grant	43.67	
Ruan Motor Co., freight	12.20	
Junior Academy	75.00	
Ben Peterson, grant	75.00	
Cornelius Gouwens, Secretary	100.00	
	<u>\$1041.96</u>	
Balance on hand March 1, 1947.....		\$ 955.46

* This includes \$232.00 of 1947-48 dues collected in advance of February.

Endowment Fund

Balance on hand, March 1, 1946.....		\$ 618.60
Receipts		
Interest (Savings Account)	\$ 5.67	
Interest U. S. bonds	37.50	
Fellows membership transfer fee	52.00	
	<hr/>	
	\$ 95.17	
Balance on hand March 1, 1947		
On deposit Union Story Trust and Savings Bank, Ames, Iowa		\$ 713.77

Holdings and Securities

United States Treasury bonds—Series D. Face value \$675.00, purchased July, 1939, Due 1949 Present value		\$ 607.50
United States Treasury bonds—Series F. Face value \$1000.00, purchased December, 1943, Due 1955. Present value	760.00	
United States Treasury bonds, Series G.....	1500.00	
Savings Account (Endowment Fund) March 1, 1947. Union Story Trust and Savings Bank.....	713.77	
Checking Account, March 1, 1947. Union Story Trust and Savings Bank.....	955.46	
	<hr/>	
Total		\$4536.73

Respectfully submitted,
Cornelius Gouwens,
Secretary-Treasurer.

Report of the Auditing Committee

The undersigned committee appointed to audit the books of the Iowa Academy of Science have this day received the books from the Secretary, have carefully checked the assets and liabilities, and report that the accounts are in proper form and correct.

Signed:
J. M. Aikman
Allen W. Goodspeed

**Report on the Distribution
of the Proceedings of the Iowa Academy of Science
on an Exchange Basis to Learned Institutions and
Societies, Domestic and Foreign.**

Covering the year March 1, 1946 — February 28, 1947.

The most outstanding feature of the exchange activities of the Iowa Academy of Science for the past year is the increased interest in and demand for the PROCEEDINGS of the Academy. The sales of the PROCEEDINGS for the last year rose to \$326.54 as compared with

\$223.97 for the preceding year. The Iowa State College Library has been receiving many more requests for the PROCEEDINGS of the Iowa Academy of Science on exchange than ever before. We have not added during the past year institutions to the exchange list unless assurance could be given that scientific research publications would be sent on exchange. As it is, we have sent during the last year the PROCEEDINGS of the Iowa Academy of Science to 164 different institutions and societies, while we have received publications in exchange from only 109. Foreign institutions especially have suffered from the paper shortage; many institutions in Europe and the Orient cannot resume publications for several years to come. Exchanges with Germany and Japan are at present in the process of reestablishment. A year or two at least will be required before exchanges on a pre-war basis can be expected.

We have removed some domestic institutions from our exchange list since there is little prospect of these institutions reviving pre-war publications. However, there still remain 28 domestic institutions on the list from which no publications were received during the last year. Inquiry will be made as to the possibility of resumption of publications.

In the case of many foreign institutions, assurances have been received that publishing activities will be resumed as soon as possible. There will be, however, a considerable increase in the number of institutions which desire to exchange their publications for those of the Academy. The sales should continue to increase. Such increases are a noteworthy commentary on the value of the PROCEEDINGS of the Academy.

Number of institutions on mailing list to which PROCEEDINGS of Iowa Academy of Science have been sent:

Domestic.....	96	Foreign.....	68
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Number of institutions noted above from which publications have been received, March 1, 1946-February 28, 1947:

Domestic.....	68	Foreign.....	42
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Number of publications received in direct exchange for Iowa Academy of Science PROCEEDINGS:

Domestic.....	84 pieces	Foreign.....	138 pieces
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Number of publications received in exchange jointly for PROCEEDINGS of Iowa Academy of Science and publications of Iowa State College (Government and State publications including bulletins of the Domestic Experiment Stations are not included)

Domestic.....	290 pieces	Foreign.....	202 pieces
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Total number of publications received from institutions to which are sent the PROCEEDINGS of the Iowa Academy of Science

Domestic.....	374 pieces	Foreign.....	340 pieces
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Institutions receiving the PROCEEDINGS as gifts:

7 U. S. Government Agencies

25 Iowa Libraries

4 Publishers of Abstracting Journals

1947]

REPORTS

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Report of Iowa Academy of Science Sales Fund

Balance on hand March 1, 1946.....	\$ 223.97	
Sale of Volume of PROCEEDINGS plus postage.....	113.97	
Total Receipts		\$ 337.88
Disbursements for Postags	\$ 11.34	
Total Disbursements		11.34
Balance 3-3-47		\$ 326.54

Report of the Editor

The Proceedings of the Iowa Academy of Science for 1946 are being published in Volume 53. The publication consists of reports, memorials, addresses, and papers of original investigation by Academy members.

Volume 53 is at present in galley proof and nearly ready for paging.

The editor wishes to express his appreciation to the Editorial Committee and the authors for their cooperation in solving the problems of publishing the Proceedings of the Iowa Academy of Science.

Respectfully submitted,
 L. R. Wilson, *Editor*.
 April 16, 1947.

With the completion of Volume 53 of the Proceedings of the Iowa Academy of Science I would like to tender my resignation as editor. It has been a pleasure to work with fellow Iowa scientists these last six years on the difficult task of wartime publishing. I regret that my close affiliation with the Iowa Academy is coming to a close, but I will always feel a strong interest in its activity. It is my hope that the members will give my successor the same loyal support that they have given to me.

Respectfully submitted,
 L. R. Wilson.
 April 16, 1947.

Report of the Committee on Biological Survey

Plans and activity with regard to the Iowa Flora project outlined in last year's report are progressing slowly. A preliminary survey of the literature of Iowa botany indicates that floras, or partial floras, have been published for 33 out of the 99 counties of the state. Another preliminary survey, based on a county-by-county tabulation of species in several selected plant families, has indicated the areas of the state most in need of study and collection.

The preparation of definitive state flora cannot be expected within the immediate future because of the inherent difficulties of collect-

ing plants in certain critical areas, the identification or the checking of specimens already accumulated in the several herbaria of the state, and the necessary bibliographic and nomenclatural research. The committee suggests that teachers of botany throughout the state should encourage their students to undertake the collection of plants in counties where the flora is least known, or to undertake preliminary systematic studies on the groups of Iowa plants which most need study. The committee is now in a position to make specific recommendations with regard to desirable areas and groups for such study. It is particularly desirable, also, that the results of such studies should be published so that they will be available to those interested in the plant life of our state. The possibility of issuing either an interim check-list of the plants of Iowa or an amplified key to these plants, is being considered by the committee.

The committee will welcome suggestions from the members of the Academy with regard to suitable subjects for a series of illustrated handbooks dealing with various phases of the biology of the state, or with regard to manuscripts already available or now in preparation which might be suitable for such handbooks.

H. E. Jaques

T. C. Stephens

R. B. Wylie

C. L. Gilly, *Chairman*.

Report of the Committee on Conservation

During the past year the committee has been giving further attention to the problem of assisting the Academy in the formulation of a general conservation policy and program. The chief difficulty of such a task arises from the fact that it must be an academy program rather than a committee program and must be initiated and put into operation by the Academy itself. Because the program must include the conservation of all resources, consideration of the several fields of conservation covered in the last five annual reports of the committee has been continued.

Recommendations made by the Conservation Committee in the last two annual reports constitute a basis for the formulation of a comprehensive conservation program by the Academy. The committee recommends that a special committee be appointed for one year by the President to work with the newly organized Conservation Committee to formulate a conservation program to be initiated and put into operation by the Academy and administered by the Conservation Committee.

Respectfully submitted,

Ada Hayden

H. S. Doty

F. F. Riecken

G. O. Hendrickson

E. B. Speaker

C. R. Keyes

H. G. Hershey

G. B. MacDonald

F. H. Mendell

J. M. Aikman, *Chairman*.

Progress Report on the Iowa Prairie Project of the Conservation Committee for 1946-1947

Survey

Of the approximately one hundred prairie areas reported in the Prairie Survey of Iowa, fifteen of the larger tracts have been described, photographed and recommended as suitable for preservation. This report is now in press (Proc. Iowa Acad. Sci. 53. 1946). The Priorities Committee appointed by the Director of the Conservation Commission met and selected four areas of prairie representing distinct agricultural soil areas for early purchase.

Cooperating Organizations

Among the organizations in the State which could aid in the acquisition of prairie preserves by their support are: The Federated Garden Clubs, Daughters of the American Revolution, State Horticultural Society, Four-H Clubs and the Iowa Action Committee of the Ecologists Union.

The County Agricultural Directors and the AAA Soil Conservation offices have cooperated in reporting known tracts of prairie within the State. The Iowa Prairie Subcommittee of the Ecological Society initiated the Prairie Survey. The Conservation Commission requested the preparation of a report and recommendations, which have been made. It also has drafted a long time extension plan designed to fulfill the requirements of the 1933 Twenty-five Year Plan of development. The budget for this bill is now pending in the Fifty-Second Assembly and needs support (H.F. 277 and S.F. 389) by all those who are interested in the conservation of our resources.

In April 1947 the State D.A.R. Assembly in Des Moines adopted a resolution in support of acquisition of prairie:

Resolution relative to the preservation of type specimens of prairie sod. Whereas, the rich prairie sod has been the source of the most of Iowa's material wealth, and its now scattered remnants may yet serve as standards of reference for comparison of tilled with untilled soils and thus safeguard future economic security, be it resolved that the Daughters of the American Revolution in assembly in Des Moines urge the State Conservation Commission to consummate its proposed plan for acquisition of prairie tracts. In furtherance of the preservation of type specimens of prairie the D.A.R. assembly commends the bill recently introduced into the House of the State Legislature as House File 277, Section 8, which provides the budget essential for this important work.

The President of the State Horticultural Society used his prerogative to formulate a resolution which was forwarded by the legislative committee to the State Legislature in support of the conservation budget:

RESOLUTION—Preservation of Native Prairie Sod—Iowa State Horticultural Society. **Whereas**, only a few areas of native sod remain in Iowa, and **Whereas**, these areas are likely to be lost due to further encroachments of agricultural development and result in the loss of original native flora of the Prairie soils, therefore be

it **Resolved** that the Iowa State Horticultural Society, through its legislative committee, commend the State Conservation Committee in its plan to acquire native sod areas. Be it **further resolved** that in order to acquire and preserve the proposed virgin sod areas, that the Iowa State Legislature appropriate funds for this purpose as provided in House File 277 and Senate File 389, Section 8.

Representatives of the Department of Agronomy and the Wildlife Research Unit have contributed to the prairie survey and other phases of the Prairie Project. In 1945 the Chairman of the Committee on Roadside Markers of the Soil Science Society of America expressed his interest in co-operation with the project of selecting roadside sites of original land to illustrate soil types.

Publicity

Six illustrated talks were given on the subject of prairie upon request to the following groups: Nature Study Division of the Faculty Women's Club, Sun Dial Chapter of the D.A.R., Des Moines Garden Club, Ames Garden Club, Graduate Women's Scientific Fraternity and the Presbyterian Women's Guild.

One radio broadcast was made on July 3, 1946, over W.O.I. and one news story was written for the Centennial Number of the Cedar Rapids Gazette by Mr. Hadley Read, Assistant Extension Professor of Iowa State College. A set of colored slides of Iowa prairies will be prepared for circulation among the Four-H Clubs, through the Visual Instruction Service of Iowa State College.

The Prairie Project is now in great need of organized legislative support. It is suggested that the Executive Committee of the Academy as well as the Iowa Action Committee of the Ecologists Union devise some program of support as well as enlist the co-operation of individuals and organizations in the actual acquisition of prairie reserves.

The Value of Roadside and Small Tracts of Prairie in Iowa as Preserves

ADA HAYDEN

Location and Size

The expanse of virgin prairie which originally comprised five-sixths of the area of the State is now reduced to scattered patches. These tracts may be found (1) in the wetter undrained parts of farms where they are locally known as hayland, (2) on high, rocky, uncultivated knolls, (3) in cemeteries, (4) along unimproved roads, (5) bordering railroad rights-of-way, (6) as well as strips between the highway and the railroad where the two run parallel. These are the chief botanizing places for the student of native grassland vegetation, and almost the only locations where school children may become acquainted with native fauna and flora, or where persons who entertain a sentimental interest in historical aspects of the State may reconstruct a picture of the original Iowa landscape. Probably sev-

equal hundred areas ranging in size from one-half to ten or more acres or known.

There are, however, as shown by a recent survey as many as fifteen larger areas of prairie, in size ranging from twenty-five acres to half a section (Hayden, 1946. These are parts of undivided estates. A considerable number of such areas which were the subjects of published scientific papers are now lost to science since many tracts were plowed as soon as the estates were sold.

Assuming that some of the larger areas representing the principal agricultural soil types of the State may be preserved, there is need also for the permanent protection of many smaller patches which are not of much value for cultivation. Yet when approached about the value of marginal land, an economist who is a student of land values stated: "Land is marginal only in relation to a given price level of farm products. At present prices, I would say we have no marginal land in Iowa, for there are few farms that will not make a return over and above labor and other operating costs."

As a result of this delusive philosophy, many a grass-edged brookside has been reduced to a muddy, soil-transporting stream by injudicious pasturage; the sparkling pond, teeming with life, to an unsightly and barren wallow. Rocky soil, from which the cover has been removed, is often abandoned only to be recovered by the hosts of wandering weeds and restored to its natural cover if undisturbed, through the long, slow process of plant succession. It was clearly demonstrated after the First World War that all land may not be cultivated with permanent profit and that irreparable injury or loss of soil usually follows its improper use. And so small fragments, which might beautify the wayside, which are locally accessible for observation, and which are themselves historic spots worthy of a marker, should be preserved, rather than lost to society by a misguided drive to measure all things by the unit of the dollar.

AVAILABLE RELICS OF NATIVE GRASSLAND

Highways

Strips of grassland along the roadsides, especially those between highway and railroad, afford colorful native gardens where the prairie wildflowers may be seen by the traveler throughout the season. They should be regarded as mileposts between the past and the present and appropriately marked so that all who pass may be aware of this natural history preserve. This type of reserve would come under the jurisdiction of the Highway Commission, and probably should have a uniform type of marker.

Wayside prairies

A few acres of prairie surrounding a pond or bordering a stream, a ridge, a hillside, or a wet meadow is frequently the habitat of choice native plants. Phlox, pasque flower, shooting star, gentian, saxifrage, moccasin flower, spiderwort, prairie lilies, prairie smoke,

and paint brush, may yet be seen in fragmentary grassland patches. In addition to preserving some virgin vegetation, the soil type associated with these plants would also be included. The Chairman of the Committee on Roadside Markers of the Soil Science Society of America writes, "I am sure that our committee will be glad to cooperate in considering the choice of known sites in relation to soil types. We have planned to work in close cooperation with the various State Highway Departments and Soil Survey Agencies of the various State Agricultural Experiment Stations."

Cemeteries

Throughout the State are abandoned cemeteries, also country and village cemeteries which could make a valuable contribution to the spots, where native plants may be seen. A few illustrations may be cited.

Black Hawk County—An abandoned cemetery of several acres, located near Waterloo was reported by Dr. Myrle Burk.

Butler County—The Butler Center Cemetery, near Allison is cited by Mrs. Gordon L. Elliott of Des Moines.

Cedar County—Rochester Cemetery near the town of Tipton, which was described by Miss Margarita Tarr, has an abundance of bird-foot violets and shooting stars in season.

Palo Alto County—Highland cemetery about four miles northeast of Ruthven includes about six acres of which three-fourths is virgin prairie of the northern type. The conspicuous plants are: Wild indigo, (*Baptisia leucophaea*), the downy gentian (*Gentiana puberula*), the butterfly weed (*Asclepias tuberosa*), phlox (*Phlox pilosa*), Indian plantain, (*Cacalia tuberosa*), rattlesnake master (*Eryngium yuccifolium*), red and white prairie clovers (*Petalostemum purpureum*), and *P. candidum*. This site tops a hill and affords a far-reaching view over Lost Island Lake and the rolling grove-dotted prairie topography now checkered by fields.

Monroe County—A notable example of prairie in a cemetery near Albia was described by Professor H. D. Hughes.

The site of the country schoolhouse

As the country school is replaced by the consolidated school an acre in each two square miles is released from occupation. Some of these areas support natural herbage which might be protected and retained as an historic spot as well as to preserve the native flora which is established on many school grounds.

County parks and preserves

Many small acreages of prairie might be protected as county preserves if the County Park Bill, which has been successively defeated in the Fifty-first and Fifty-second Iowa Assemblies, had become a law. This measure should be supported by biologists who appear to be largely indifferent to the establishment of their own, much needed field laboratories.

Uses of small tracts

The natural plant cover of Iowa is nearly gone, but the ecology of the State has not yet been written. Nevertheless in the earliest settled part of the State, in southeastern Iowa where the area has been so completely utilized by man that only small tracts of grassland of less than twenty acres remain, a comprehensive list of plants has been prepared by Gilly and McDonald (1947) including a number of hitherto unreported native species. An unpublished manuscript by Malcolm McDonald on the **ECOLOGICAL PLANT GROUPS IN JEFFERSON COUNTY**, made available by Charles Gilly, lists the chief collecting stations in the County with the plants found in the diverse environments. These papers illustrate how the story of vegetation can be pieced together even as the concept of the dinosaur has been reconstructed from its scattered component parts.

The Permanent Protection of Small Tracts of Prairie Sod

The salvaging of scattered acreages of prairie sod so valuable as natural specimens of vegetation can be accomplished only by the cooperative efforts of persons interested in the composite symbol of the prairie: the soil scientist, for the soil type specimen; the biologist, for the vegetative cover and the flora and fauna thereof; the horticulturist and agronomist, for the ancestors of cultivated plants; the floriculturist, the landscape artist and the biologist for nature's garden, the historian, as a milepost.

High School Relations Committee, 1947

The only meeting of the High School Relations Committee for the year 1946-7 was held in Cedar Falls on Friday evening, April 18, 1947. A general program for the year 1947-8 was adopted. All activities of this year are to be continued with especial attention to: (1) increasing the number of registered clubs, and (2) extending the Science Talent Search.

At the Grinnell meeting April 19, and 20, 1946, the following awards were made for exhibits: Superior to the Phi-Chem Club of Keokuk, the General Science Club of Grinnell, and the Teacher's College High School Club of Cedar Falls; Excellent to the S.O.S. Club of Wilson High School, Cedar Rapids, and the General Science Club of Amos Hiatt High School, Des Moines. At the close of the school year Special Recognition Certificates were awarded: to the S.O.S. Club of Wilson High School, Cedar Rapids for Preservation of Wild Plants; to the General Science Club of Amos Hiatt High School, Des Moines, for a Science Fair (1943); to the Radicals of University High School, Iowa City for special service to the Junior Academy (1944); to the General Science Club of Amos Hiatt High School, Des Moines, for War Work (1944).

Early in October, on account of his serious illness, H. R. Blan-

chard asked to be relieved of his duties as Junior Councilor. His resignation was accepted and Richard Van Dyke of Cedar Falls High School was appointed to fill the vacancy. When Mr. Van Dyke resigned from the faculty at Cedar Falls High School, his successor, Anton Hofstad, became Junior Councilor and completed the term.

The executive council of the Junior Academy of Science of Iowa met at the Y.M.C.A. Building in Cedar Rapids, Iowa, on November 16, 1946, and were in session both morning and afternoon.

It was decided

1. to reward achievement without emphasizing competition in all Junior Academy activities,
2. to hold the annual meeting in conjunction with the Senior Academy, at Cedar Falls in the spring of 1947,
3. that each registered science club be allowed two delegates to the business meeting,
4. that membership cards be designed and furnished to members of registered clubs,
5. that the possibility of furnishing a membership pin be investigated,
6. that an Iowa Talent Search be conducted in cooperation with the Westinghouse Science Talent Search,
7. that a Science Newsletter be published by the Junior Academy monthly,
8. that a pamphlet be prepared by D. C. Stroud outlining the history and aims of the Junior Academy, for general use, but especially for furnishing information to independent clubs which might wish to become members of the Junior Academy,
9. that apparatus exhibits be solicited for the meeting at Cedar Falls and the awards be made for creditable exhibits,
10. that individual members of the Junior Academy be invited to present essays at the Cedar Falls meeting and that awards be made for creditable essays and that these essays or summaries of them be read at the meeting or published in the Newsletter.

John C. W. Bliese was appointed director of essays and has been responsible for the collection, rating, and presentation of the essays.

D. C. Stroud prepared a statement of the history and aims of the Junior Academy of Science of Iowa. It has been published in the Newsletter and will be printed as a pamphlet.

The membership pins were too expensive, but membership cards were designed and distributed by D. C. Stroud.

Richard Van Dyke and his Alpha Beta Kappa Club of Cedar Falls High School undertook the publication of the Newsletter. Anton Hofstad continued this activity when he succeeded Mr. Van Dyke in the Cedar Falls High School and as Junior Councilor.

F. E. Brown was appointed to arrange for the Iowa Science Talent Search. Very soon after the Cedar Rapids meeting of the Executive Council, the agreement with Science Clubs of America to conduct an Iowa Science Talent Search was signed. J. C. Gilman of Iowa State College represented the Iowa Academy of Science at Boston

during the Christmas Holidays in a conference of persons interested in state science talent searches. Efforts have been made to secure some money for awards but no success has been achieved in this endeavor. It is believed that scholarships can be secured for all high school seniors given honorable mention in the search. By some miscalculation the papers of the Iowa entries were not received in Iowa until March 20th, though they were expected on February 15. Ratings have not yet been made and announcements and awards cannot be made at the Cedar Falls meeting as planned.

During the year 1945-6 ten clubs paid the \$2.00 fee and received charters. This year eight clubs renewed their charters and seven others have been added making fifteen chartered clubs for the year 1946-7.

Science Clubs of America reports that 349 sponsors were contacted in Iowa during the year 1946-7, compared to 285 in 1945-6 and 173 in 1944-5. Forty-nine Iowa teachers requested 388 examination blanks for the Science Talent Search and fifty-five completed examinations and records were received for rating by the Iowa committee.

The committee recommends that the usual \$75.00 be appropriated for expenses of the Junior Academy for the year 1947-1948.

The committee nominates Anton Hofstad of Cedar Falls High School for Senior Councilor, Miss Georgiana Holloway of Grinnell High School for Junior Councilor and D. C. Stroud of Amos Hiatt Junior High School, Des Moines, for Permanent Secretary of the Junior Academy.

Warren N. Keck
 D. C. Stroud
 E. R. Becker
 F. E. Brown, *Chairman*.

Report of the Membership Committee

The membership committee wishes to present the following names for election to the Iowa Academy of Science:

Life Membership, 1: M. E. Barnes.

Emeritus Fellow, 6: Louis Begeman, James A. Coss, F. M. McGaw, W. J. Rusk, T. C. Stephens, L. D. Weld.

Transfer to Fellow, 5: Wilford D. Crabb, H. D. Hissong, A. R. Lauer, William A. Owens, H. C. S. Thom.

Reinstatement, 2: Winfield Scott, Norman Stevens.

Fellows, (20): Howard C. Abbott, University Park; Charles V. Banks, Ames; Robert G. Brown, Conesville; Alice M. Carlson, Pella; C. S. Grove, Jr., Iowa City; D. Elmo Hardy, Ames; John F. Hodson, Burlington; Robert L. Hulbary, Iowa City; Richard W. Husband, Ames; Duane Isely, Ames; James A. Jacobs, Iowa City; Don Kirkham, Ames; Jerry J. Kollros, Iowa City; Vernon G. Schaefer, Ames; R. R. Sealock, Ames; George C. Seeck, Ames; Paul W. Soderberg, Burlington; E. P. Sylwester, Ames; Louis A. Turner, Iowa City; Adolf F. Voigt, Ames.

Associates, (112): Roy L. Abbott, Cedar Falls; H. P. K. Agersborg, Des Moines; Abram Amsel, Iowa City; Mrs. David Bailey, Cedar

Falls; Gabriel Baldovinos, Ames; Max Beemblossom, Washington; A. E. Bell, Ames; William Berninghausen, Iowa City; Frank E. Bortle, Ames; Eugene Bovee, Cedar Falls; Keith C. Brinker, Waterloo; Robert E. Buckles, Iowa City; Earle L. Canfield, Des Moines; Thomas W. Carter, Jr., Moline, Illinois; R. M. Chatters, Sioux City; H. F. Chu, Mt. Pleasant; Bertram Cohen, Iowa City; Donald W. Conover, Ames; William H. Coppock, Des Moines; Wiley W. Crawford, Dubuque; Frances Crouter, Cedar Falls; D. A. Danielson, Iowa City; Fred H. Dorheim, Ames; David G. Easker, Iowa City; Charles R. Estee, Iowa City; Archie N. Euwer, Washington; Helen Friend, Cedar Rapids; Robert E. Gaskell, Ames; Glenadine Gibb, Cedar Falls; B. E. Gillam, Des Moines; Gene Guinn Green, Davenport; Noel H. Gross, Ames; Henry B. Hale, Des Moines; Charles E. Hamilton, Iowa City; Harold W. Hansen, Ames; Robert Hansen, Walcott; Bruce C. Heezen, Iowa City; James Hodges, Davenport; Roy L. Horn, Indianola; John Philip Hummel, Iowa City; Robert E. Karll, Iowa City; K. B. Kerr, Charles City; Paul E. Kimberly, Des Moines; J. K. Knipp, Ames; Robert J. Lambert, Des Moines; N. M. Langenfeld, Davenport; Gloria J. Laurie, Grinnell; Byron Laycock, Des Moines; Fay Layne, Cedar Falls; Jesse Carroll Linch, Mt. Pleasant; E. F. Lind, Ames; William Lloyd, Mt. Pleasant; Frederic J. McAllister, Des Moines; Robert E. McDermott, Ames; W. H. McFarland, Des Moines; Francis McKay, Charles City; Clifford J. Maloney, Ames; Doris Marvin, Grinnell; Homer Virgil Meek, Ames; H. A. Meyers, Davenport; Dorothy Miller, Cedar Falls; Gene V. Mock, Iowa City; Albert E. Moorman, Oskaloosa; Mrs. Roger M. Morrow, Mt. Pleasant; George W. O'Brien, Keokuk; James O. Osburn, Iowa City; Edward Charles Palmer, Ames; Edwin F. Peters, Des Moines; O. H. Peterson, Charles City; Travis J. Phillips, Cedar Falls; Willis L. Pickard, Cedar Falls; Alexander Popov, Iowa City; Enos G. Pray, Dubuque; Sherman W. Rabideau, Iowa City; F. K. Ramsey, Ames; Donald H. Rock, Ames; Hazel M. Rothlisberger, Dubuque; Robert V. Ruhe, Ames; J. Sadoff, Des Moines; Eugene Sallee, Ames; Roy M. Sallee, Macomb, Illinois; Viola A. Sanders, Mt. Pleasant; Corinne Schluss, Ames; Donald A. Scott, Mt. Vernon; Carl E. Sealander, Ames; Harold G. Sehnert, Iowa City; Mrs. Marjorie Seiser, Ames; Ralph A. Shalla, Keokuk; J. Hervey Shutts, Mankato, Minnesota; Robert C. Skar, Cedar Falls; Charles D. Starr, Mt. Vernon; Ira M. Steisel, Iowa City; Arnold L. Stientjes, Sioux City; B. A. Storey, Des Moines; Andrew Timnick, Iowa City; Richard F. Trump, Ames; Marguerite Uttley, Cedar Falls; Arthur W. Walde, Charles City; Gene Wallar, Cedar Rapids; Henry S. Ward, Ames; Kenneth M. Watson, Iowa City; Wilse Bernard Webb, Iowa City; Russell G. Weber, Cedar Rapids; James Wick, Mt. Pleasant; Wilma Winberg, Ames; John M. Woods, Des Moines; Rachel Hodges Woods, Des Moines; Harold R. Yeoman, Marion; R. A. Young, Ames; Walter Youngquist, Iowa City; Wm. Youngworth, Sioux City; E. A. Zubay, Des Moines.

Respectfully submitted,

R. W. Getchell,

Chairman, Membership Committee.

Report of Committee on Resolutions

The Committee on Resolutions submits the following and recommends adoption and incorporation of the Proceedings:

BE IT RESOLVED: (1) that the officers and members of the

Iowa Academy of Science extend thanks and expressions of appreciation to the administration and Faculty of Iowa State Teachers College and to the local Committee on Arrangements for their hospitable and efficient welcome;

(2) that the Academy extend to the retiring Editor, Dr. L. R. Wilson, its sincere appreciation for his efforts in the publication of the last six issues of the **Proceedings** and in compiling the Index for the first fifty volumes.

H. Earl Rath, Ben H. Peterson, J. M. Aikman, *Chairman*.

Report of the Committee on Necrology

The committee on necrology wishes to report that five members of the Academy have passed on to their reward. They are C. M. Fraser, R. A. French, F. E. Goodell, R. M. McKenzie and W. M. McLaughlin. Memorials in tribute to these members are being prepared for publication in the Proceedings of the Academy.

The committee moves that this report be received by standing for a moment in silent prayer.

Respectfully submitted: W. B. Zuker, J. R. Jenness, D. C. Stroud.

IN MEMORIAM

Charles McLean Fraser

1872-1946

In the sudden death of Charles McLean Fraser, Professor Emeritus of the University of British Columbia, on December 26, 1946, marine zoology in North America lost one of its most distinguished investigators. Until three days before Christmas, Doctor Fraser was engaged



C. M. Fraser

in putting the finishing touches on still another large paper on the Hydroids, a group of invertebrate animals on which he had published extensively for the past thirty-five years. His interest in biological sciences extended for fifty years and his close study of marine zoology for forty-five years.

Charles Fraser was born June 1, 1872, in Huron county, Ontario. As a lad of 18 he taught public school and then attended what is now the Ontario College of Education. His interest in natural science led him to the University of Toronto where he graduated with the degree of B. A. Honours in 1898 and then became a graduate student and an assistant in Biology under Professor Ramsay Wright. Two summers (1901 and 1902) spent at the Marine Biological Station at Canso, Nova Scotia, awakened in him an interest in marine zoology, which remained as a passion with him for the rest of his life. His association with British Columbia started in 1903 when he became Science Master at Nelson High School. That same year he obtained his M. A. degree from Toronto and in 1904, he married Clara A. Cassidy of Toronto. For the next six years from 1904 to 1910 he was Principal and Science Master at Nelson High School, spending the summers of 1908 and 1909 at the Biological Station at Nanaimo, which was opened in 1908. In 1910 and 1911 he was at the State University of Iowa, associated with the late Professor C. C. Nutting, at that time a world's authority on the Hydroids, from whom Charles Fraser acquired the interest in these animals which was to last for the rest of his life, and in whose study the pupil eventually became greater than his teacher. His thesis "The Hydroids of the West Coast of North Amer-

ica" gained him the Ph.D. degree and was his first scientific paper. It is of interest to record that while the camera lucida drawings for Professor Nutting's great monograph of the Hydroids were prepared by the late Dr. Dayton Stoner, the thousands of fine illustrations for Fraser's publications were mostly done by his wife, Clara Fraser.

From 1912 to 1924, Doctor Fraser was Director of the Biological Station at Nanaimo and from 1920 to 1940, Professor and Head of the Department of Zoology at the University of British Columbia. During the twelve years that he was Director of the Biological Station, he concentrated on the identification of the enormous numbers of species of marine animals that occur in British Columbian coastal waters, and became an expert in navigation and in dredging. Apart from the meticulous records kept of the collections of these marine animals from Protozoa to mammals, Dr. Fraser's astonishing memory enabled him to recognize at sight, any organism he had encountered and whose specific identification he had determined. His records laid the foundation for extensive check lists of the life of B. C. coastal waters.

Doctor Fraser was an unusually widely traveled man. Before coming West, he had worked at Biological Stations on the Atlantic Coast at Beaufort, N. C.; Harpswell, Me., Woods Hole, Mass., and Canso, N. S., and there was not much of the Pacific Ocean that he had not covered. He attended all six Pacific Science Congresses that have been held from 1920 to 1939 at Honolulu, Melbourne and Sydney, Tokyo, Java, Victoria and Vancouver and at Berkeley and Stanford. On the way to and from these meetings he made many side trips literally all over the Pacific including New Zealand, Tasmania, much of Hondo, Hongkong, Singapore, Krakatau and the surrounding coral islands. On all these trips except to the Congress at Java, he was accompanied by Mrs. Fraser; after this fourth Congress at Java, he returned to Canada by way of Penang, Colombo, Suez, Cairo, Alexandria, Naples, Rome, Monaco, Paris, all over England and Scotland and back to Montreal, making full use of the opportunity to visit the most notable educational institutions, marine stations, museums, zoological and botanical gardens in each country visited. On this continent he had seen much of the United States, including Alaska, and every Province and capital city in Canada except Fredericton, N. B. With the Allan Hancock Foundation he traveled down our west coast as far as Ecuador, Chile and the Galapagos Islands, putting in at all the main ports on the way.

Although his life work and interest centered largely around Hydroids, he published extensively on: life history studies of marine fish, chiefly salmon and herring; Coelenterates other than Hydroids; oceanography; parasitic Copepods; marine borers; seals; several species of clams; marine plankton; conservation; and the physical and chemical properties of coastal waters. Altogether, he published over 125 articles of considerable length including three large books

on the taxonomy and distribution of American Hydroids; his latest effort, on a coastal medusa, was completed just before his death and is still in press.

His prodigious memory for names and faces enabled him to greet men of many nations whom he had not seen for years and in any scientific gathering he seemed to know and be welcomed joyously by practically everybody present.

Charles McLean Fraser, Friend, Scientist, and Teacher, searched widely and contributed richly to Marine Biology through a long span of years. By spreading this brief summary of his life and activities on its records, the (Iowa Academy of Science) desires to express to Mrs. Fraser who survives him, its admiration of and homage to her late husband and to extend to her, its united and heartfelt sympathy in her bereavement.

G. J. Spencer,
Vancouver, B. C.

Raymond A. French

1876-1947

Raymond A. French died suddenly on January 12, 1947. He is survived by his wife, Mrs. Minnie French, his son, Dr. Dexter French, Ames, Iowa, and two daughters, Dr. Anna Mae Lassmann, Jalapa, Mexico, and Mrs. Katherine Von Loew of Chicago, Illinois, and 5 grandchildren.



R. A. French

Doctor French was born at Emerson, Iowa, April 20, 1876, and received his secondary school education in the public schools of Glenwood, Iowa. He received his Bachelor of Arts Degree, with a major in biology, at the University of Iowa in 1907, and was elected to membership in Phi Beta Kappa. In 1920 he was awarded his Doctor of Philosophy degree, also with a biology major, from the University of Iowa.

Doctor French taught for a number of years in the public schools of Iowa, and in 1913 was appointed Professor of Biology at Highland Park College and remained there until 1917 when he was named Professor of Biology at Des Moines University. In 1920 he was appointed Professor of Biology and head of the department at the University of Dubuque, the position he held until he resigned and was made Professor Emeritus in June, 1946.

Dr. French was a member of the Iowa Academy of Science, of the Iowa State Teachers Association, and of the American Association for the Advancement of Science.

He was a man of many interests but he gave himself whole-heartedly to his love of botany and related subjects, and spent much time in the study of the plants native to Iowa.

At the University of Dubuque Convocation in June 1945 he was cited by Dr. Hale D. Welch, President, for his 25 years of faithful service, and he was commended for his loyal and meritorious work, both in the class room and in extra curricular activities.

He was a great teacher beloved by faculty and students alike.

W. B. Zuker.

Frank E. Goodell

1867-1946

The passing of Frank E. Goodell at his home at 3620 Adams Street in Des Moines on Thursday, September 5, 1946, brought to a close the life of a scientist and a teacher who was a friend of all who knew him. He had been ill at his home for several years but always



F. E. Goodell

enjoyed having visitors. No doubt he used more of his waning energy than he should have in giving a warm welcome to those who called. Mr. Goodell's home was always known for its hospitality and for many years it was tradition that the Des Moines science teachers should have their opening meeting of the year with the Goodell family.

Mr. Goodell was born at Morrison, Illinois, on February 20, 1867. In 1883 he moved with his parents to Emerson, Iowa, and had been a resident of the state until his death.

He was graduated by the University of South Dakota in 1889 where he earned his bachelor's degree. Later he did graduate work at Johns Hopkins University and at the University of Chicago.

Mr. Goodell had a long and varied teaching experience in the fields of chemistry and physics. He taught at Des Moines College from 1892 to 1895; at North High school in Des Moines from 1896 to 1916; at the University High School at Iowa City from 1916 to 1919; at the former West High School of Des Moines from 1919 to 1927; at North High again from 1927 to 1929; and at East High school from 1929 until his retirement in 1937.

All during his teaching career Mr. Goodell could be found interested in presenting an approach to his pupils that would challenge them to take a keener interest in the study of science.

During his teaching career Mr. Goodell served as president of the city science teachers of Des Moines, an organization he helped to found; as president of the Iowa Association of Science teachers; as president of the Central Association of Science and Mathematics teachers. He became a member of the Iowa Academy of Science in 1911 and at the time of his death he was an emeritus fellow. He was also a member of the American Association for the Advancement of Science.

Along with a busy life as a teacher Mr. Goodell carried on im-

portant church work as a member of the Forest Avenue Baptist Church of Des Moines. For many years he served as a member as well as president of the Des Moines Council of Churches. His interest in education made him a valuable member of the Des Moines Council of Christian Education, an organization which he had served as president.

The fine influence that Mr. Goodell exerted in his home, church and school is a memorable contribution to the community he served so long.

Dean C. Stroud,
Des Moines, Iowa.

R. Monroe McKenzie

1867-1947

By the death of Professor R. Monroe McKenzie on the twentieth of last January, Parsons College lost a staunch friend who was a member of the faculty for a longer period than any other person in the history of the college.

In 1925 Dr. Willis Parsons, who was then president of the college, referred to him as "The man of encyclopedic learning and modest demeanor, who for twenty-two years has stood for and with the college, building himself into its very structure; a tower of strength to every administration; ever growing in the esteem and love of his pupils."



R. M. McKenzie

his keen sense of humor; his capacity for friendship; his likable personality which made him loved as well as respected by succeeding generations of students.

Doctor Gates made special mention of the last two years of his work as a teacher. In 1940 it was proposed that a course in meteorology be offered for those students who were soon to enter the armed service of their country. Doctor McKenzie, who for years had been making weather observations for the U. S. Weather Bureau was the logical man for the course. Although he had never taught meteorology, he consented to it. Although he was then nearly the age of seventy-five he entered into the work with so much enthusiasm and acquired such competence in the subject that it was quite a disappointment to many that he decided to retire from teaching altogether after he had taught the course for two years.

He was born in Jersey City, New Jersey, April 12, 1867. He attended New York University, graduating in 1890, and in 1892 obtained his master's degree there. He then entered the graduate college of John Hopkins University and obtained the degree of Doctor of Philosophy in 1896. In 1939 Parsons College conferred on him the degree of Doctor of Science.

For a few months during 1896 and 1897 he was industrial chemist for Central Scientific Company; then, in 1897 became instructor in chemistry at the University of Cincinnati. While teaching here he met

Winifred Hopple whom he married in 1901. In 1900 he went to Stevens Institute where he taught until he came to Parsons in 1903.

In 1907 the McKenzies moved into a house on the campus and a host of Parsons alumni will long remember the hospitalities of their home as one of the bright memories of their college days.

He was widely known in scientific circles. He was a member of The American Chemical Society, The German Chemical Society, The American Association for the Advancement of Science, and the Iowa Academy of Science. He joined the Iowa Academy in 1904 and was elected fellow of the Academy in 1917. He served as vice president in 1918-19. He was a member of Sigma Psi and Phi Kappa Phi. He was active in civic affairs, and was for many years an elder in the Presbyterian Church of Fairfield. On the day before his death he spent some time in putting the finishing touches to some accounts he was keeping as secretary of benevolences for the church.

**T. Russell Jenness,
Fairfield, Iowa.**

W. M. McLaughlin

1871-1945

William Marion McLaughlin, son of Angus McLaughlin and Catherine Sells McLaughlin, was born in Hamilton County, Iowa, on the 7th day of September, 1871. He died at his home in Des Moines, Iowa, after a year's illness on the 15th day of September, 1945, at the age of 74.

His grandfather, who had come from Scotland, migrated from Ohio to Iowa by covered wagon drawn by oxen. The family stopped and rested on the hill now occupied by the Iowa State Capitol at Des Moines and considered settling down at that place but determined to move on. Ultimately there was selected a farm on the Boone River which had the advantage of timber and also of water. It was on this home place that William McLaughlin was born.

He received his education in country school; at Iowa State College, 1891-1892; at the Iowa Normal School, Algona, Iowa, 1892-1893, after which for a number of years he taught in rural schools in northern Iowa and near Ankeny, Iowa.

He attended Drake University in 1898 and 1899, graduating with the degree Bachelor of Laws. On January 20, 1898, he married Cornelia May Smalley who survives him. Three daughters were born of this union: Ferne (Mrs. John W. Woods) who predeceased him, Katherine (Mrs. Carl W. Smith), and Georgia Lee who survive.

He was admitted to practice in 1900. For the first few years of his practice he was in partnership with the late Judge Frank S. Shankland. In 1905 he became Assistant City Solicitor for the City of Des Moines which position he held for three years. In 1918 he entered the employ of the Southern Surety Company in Des Moines, became general attorney, and in 1928 moved with the company to St. Louis where he served until 1931.

He returned to Des Moines in 1932 occupying an office with the firm of Parrish, Cohen, Guthrie & Watters and during the last few years of his practice he shared office space with other attorneys.

He had a sympathetic ear for those who approached him for advice. The employees of the Southern Surety Company frequently came to him to pour out their troubles and he was always willing



W. M. McLaughlin

to give advice and counsel. It was not, therefore, surprising that he should have acquired the title of "Judge" and the title he thus acquired stayed with him during the balance of his life.

His boyhood life was rigorous and one of rough and tumble on the farm where he was born. He was the youngest of four boys, one of whom, Angus A. McLaughlin, Attorney, of Des Moines, Iowa, survives him. He was of large stature and powerfully built. He loved wrestling, boxing and other individual sports, calling for courage and feats of strength. He played handball until he went to St. Louis in 1928 at the age of 57.

He loved to read serious books, particularly history, the history of his country, for he was a true patriot, the history of the Indians, and in a larger sense the history of the earth itself as it is revealed to the student of geology. He was a very close student of early Iowa history, long a member of the Iowa Historical Society, Iowa City, and of the Pioneer Club in Des Moines, of which he was president at the time of his death.

He had membership in Grace Methodist Church, Des Moines, Iowa. He was a believer in the power of goodness of God, and Recognized His handiwork in nature and the world about him. He was an idealist and the serenity of his faith gave to him dignity of spirit, and a gracious and kindly manner which endeared him to all his friends.

JAMES M. STEWART.

Report of the Program Committee

Dr. Arthur C. Trowbridge of the State University of Iowa was the guest speaker at the Open Meeting of the Academy on Friday evening. He gave an illustrated address on the subject "A Geological Expedition to Norway."

The Iowa Medical Society participated in a joint symposium with the Academy on Friday afternoon with the program:

1. *Some effects of estrogen on the ovary and the pituitary of the infantile rat.* J. T. Bradbury, Iowa City.
2. *The effect of estrogen on the ovary of thyroidectomized rats and rats given thiourea.* R. G. Janes, Iowa City.
3. *The relation of hypophyseal hormones to maintenance of function of the corpus luteum.* W. O. Nelson, Iowa City.
4. *Ovarian function as revealed by studies on parabiotic rats.* E. Witschi, Iowa City.

In the section meetings a total of 101 papers were contributed by 114 authors. The registered attendance was 250 with the total estimated attendance about 350.

The programs of the various section meetings follow:

Section Meetings

BOTANY

1. *Twenty-five more Iowa mosses and liverworts.* Henry S. Conard, Grinnell.
2. *Mosses and liverworts new to Iowa and new county records.* Henry S. Conard, Grinnell.
3. *Notes on the grasses of southeastern Iowa.* Robert S. Brown, Ames.
4. *A contribution to the flora of southeastern Iowa.* Charles L. Gilly, Ames, and Malcolm E. McDonald, Ann Arbor.
5. *Relation of stalk-stiffness to histological structure in Zea mays.* Jean Anne Magee, Ames.
6. *Kernel morphology in lines of pop corn of diverse geographical origin.* John E. Sass and J. C. Eldredge, Ames.
7. *Specific tissue responses of some weeks to 2-4 dichlorophenoxy-acetic acid.* J. E. Sass and E. P. Sylwester, Ames.
8. *Experiments showing that the ability to develop lateral roots is influenced by the crown buds in biennial Sweet Clover.* John N. Martin, Ames.
9. *Variation in the internal temperature of trees in response to the variation in the temperature of the environment.* John N. Martin, Ames.
10. *Mechanism of Protein Synthesis.* W. E. Loomis, Ames.
11. *An annotated check list of the Homobasidiomycetes of Iowa.* Phyllis D. Gardner, Iowa City.

12. *Illustrations of the fleshy fungi of Iowa IX. Some additional Gastromycetes.* Joseph C. Gilman, Ames.
13. *Some species of Cyphella, Solenia and Porothelium,* Paul Lewis Lentz, Iowa City.
14. *Linospora gleditsia in Iowa.* E. Robena Luck, Washington, D. C.
15. *Tremellaceous fungi as wood-rotting agents.* George L. Coffey, Iowa City.
16. *Host range of Chalara quercina* H. S. M. Dietz and James W. Barrett, Ames.
17. *Preliminary report on Glomerella sp. parasitic on Soya max.* Lois Hattery Tiffany, Ames.
18. *Some histological features of potato stem necrosis associated with Actinomyces scabies.* W. J. Hooker and J. E. Sass, Ames.
19. *A recount by species of the trees of Mount Pleasant, Iowa.* Mrs. Jean Morrow and H. E. Jaques, Mount Pleasant.
20. *The value of Iowa roadsides and small tracts of prairie as preserves.* Ada Hayden, Ames.
21. *The flora of Iowa, A progressive report based on past contributions.* Charles L. Gilly, Ames.

CHEMISTRY, INORGANIC and PHYSICAL

1. *The Periodic Table.* George Glockler, Iowa City.
2. *The half-wave potential of neodymium.* Charles Estee, Iowa City.
3. *The half-wave potential of samarium.* Andrew Timnick, Iowa City.
4. *The half-wave potential of gadolium.* S. W. Rabideau, Iowa City.
5. *The determination of small amounts of chlorinated hydrocarbons.* L. K. Arnold and E. G. Hollowell, Ames.
6. *The reaction of ammonia and ethylene oxide in a packed column.* C. S. Grove, Jr., J. O. Osburn and J. M. Lenoir, Iowa City.
7. *The transfer coefficients of SO₂-H₂O in a packed column.* C. S. Grove, Jr., J. O. Osburn and L. O. Brown, Iowa City.
8. *The molecular vibrations of hexafluoroethane.* Walter F. Edgell and Elwin Brown, Iowa City.
9. *On the decomposition of some N-bromoamides.* Walter F. Edgell and Robert E. Buckles, Iowa City.
10. *The heat capacities and heat of fusion of the xylenols and the ideality of their binary systems.* Ben H. Peterson, Clifford Jensen, and Barbara Carrithers, Cedar Rapids.
11. *The metallurgy of Uranium and associated elements.* H. A. Wilhelm, Ames.
12. *Applications of tracers.* Adolph Voigt, Ames.

CHEMISTRY, ORGANIC and BIOLOGICAL

1. *Crudes of Iowa coal*. S. W. Hockett, Mount Pleasant.
2. *Solvent extraction of soybean oil with mixtures of trichloroethylene and thyl alcohol*. S. G. Measamer, O. R. Sweeney, and L. K. Arnold, Ames.
3. *The antioxygenic synergism of phosphoric and other acids with quinols in the stabilization of fat*. V. P. Calkins (to be presented by Dr. Henry A. Mattill), Iowa City.
4. *Oxidative phosphorylation in normal and dystrophic muscle*. J. P. Hummel, Iowa City.
5. *The effect of various ions on the formation of utilization of citric acid on rabbit kidney tissue*. G. Kalnitsky, Iowa City.
6. *Preparation and reactions of tiglic and angelic acids*. R. E. Buckles and G. V. Mock, Iowa City.
7. *Preparation and properties of O-phthalaldehyde*. Stanley Wawzonek and Robert E. Karll, Iowa City.
8. *Additional reactions of carbon-carbon double bonds with N-bromoacetamide*. R. E. Buckles, Iowa City.

GEOLOGY

1. *Notes on the occurrence of conodonts in Iowa*. Walter Youngquist, Iowa City.
2. *Annual recessional moraines in eastern South Dakota and southern Minnesota*. C. S. Gwynne, Ames.

MATHEMATICS
and the

Iowa Section of the Mathematical Association of America

1. *On differential difference equations*. H. P. Thielman, Ames.
2. *Some applications of the finite Fourier transformations*. R. E. Gaskell, Ames.
3. *On the number of paths in a finite partially ordered set*. E. W. Chittenden, Iowa City.
4. *Dirichlet's problem*. D. L. Holl, Ames. (Invited address, one hour.)
5. *A model for irreducible double modules*. B. Vinograde, Ames.
6. *Solution of iterated amplifiers by generalized Laplace transform*. W. M. Stone, Ames.
7. *On the general theory of functions*. E. W. Chittenden, Iowa City. (To be read by title.)
8. *Nearly efficient estimates of variance components*. S. Lee Crump, Ames.
9. *A property of the projective cubic*. C. J. Maloney, Ames.

10. *Curve fitting—an art or a science.* G. W. Snedecor and G. W. Brown, Ames.
11. *Interpretation of "college preparation" by individual teachers of high school mathematics.* H. C. Trimble, Cedar Falls.

PHYSICS

1. *Note on high school physics as a preparation for college physics.* W. H. Kadesch, Cedar Falls.
2. *Student measurement of capacitance by the method of substitution.* W. H. Kadesch, Cedar Falls.
3. *Plasticity of zinc crystals.* E. P. T. Tyndall and C. A. Wert, Iowa City.
4. *Internal friction of zinc crystals.* C. A. Wert, Iowa City.
5. *Radio today from the listener's standpoint.* Robert Skar, Cedar Falls.
6. *An interesting case of undercooling.* Earl C. McCracken, Washington, D. C. Read by L. T. Earls, Ames.
7. *Principles and design data of 70 MEV synchrotron for Iowa State College.* R. L. Leachman, Ames.
8. *Constant current source for a beta-ray spectrograph.* W. W. Pratt, Ames.
9. *Nuclear resonance absorption.* Arthur Roberts, Iowa City.
10. *Two simple methods for observing nuclear resonance absorption.* H. Bruce Phillips, Iowa City.
11. *Control systems for Van de Graaf generators.* Lloyd O. Herwig, Iowa City.
12. *The kilowatt-hour meter in a student experiment.* Grant O. Gale, Grinnell.
13. *Descent times of parachutes.* J. E. McDonald, Ames.
14. *Significance of complex quantities in Schroedinger's Psi function.* John A. Eldridge, Iowa City.
15. *On the relativistic invariance of the canonical field equations and the location of energy, momentum and angular momentum in a field.* J. M. Jauch, Iowa City.
16. *Note on the gamma-ray spectrum of MG^{24} .* L. A. Turner, Iowa City.
17. *Some theoretical problems in electronics.* J. K. Knipp, Ames.
18. *The diffusion of mesotrons in the atmosphere.* J. F. Carlson, Ames.
19. *Some boundary value problems in the flow of gases through soil.* J. F. Carlson, Ames.
20. *Some tests of a theory of capillary flow in soils.* Don Kirkham, Ames.

21. *The polarizability of the neutron in an electro-static field.* Kenneth M. Watson, Iowa City.
22. *Properties of electrets.* Richard F. Rutz, Iowa City.
23. *Growth of zinc sulfide single crystals.* Norman Stevens, Iowa City.

PSYCHOLOGY

1. *Selection of the optimal scoring plan for the Fritz test of cynicism.* Charles Neidt, Ames.
2. *Co-variation of cynicism and idealism.* Martin F. Fritz Ames.
3. *A validation study of the work preference inventory.* George D. Lovell, Hartwell Davis, and Alfred Meacham, Grinnell.
4. *Preliminary evaluation of a new form of mechanical comprehension test.* W. A. Owens, Jr., Ames.
5. *Symphosium on modern conceptions of motivation.* A. Amsel, C. E. Hamilton, L. Immergluck, and W. B. Webb, Iowa City.
6. *Personality traits as measure of collegiate under-achievement.* Wilma C. Winberg, Ames.
7. *A comparison of the Minnesota personality test and the Bell adjustment inventory for student counseling.* George D. Lovell, Gloria Laurie, and Doris Marvin, Grinnell.
8. *Positive transfer as a factor in memory.* R. W. Husband, Ames.
9. *An evaluation of various short forms of the Wechsler-Bellevue test.* Bertram Cohen and Ira Steisel, Iowa City.
10. *The relation between ocular dominances, handedness and visual acuity.* Edward C. Palmer, Marjorie Seiser, and A. R. Lauer, Ames.
11. *Some factors increasing the legibility of STOP signs.* A. R. Lauer and L. F. Embree, Ames.
12. *A preliminary analysis of attitudes relating to driving.* Donald W. Conover, Ames.
13. *A further analysis and criticism of certain test criteria.* A. R. Lauer, Ames.
14. *Open discussion of organization of a state association of psychologists.* Charles R. Strother, Iowa City.

SCIENCE TEACHING

1. *The underlying philosophy of the Iowa secondary school curriculum program.* W. H. McFarland, Director of the Secondary Curriculum, Des Moines.
2. *Progress report on revision of curriculum in general science for Iowa high schools.* Ralph A. Shalla, General Science Production Committee, Keokuk.

3. *Selection of science students at the college level.* John L. Holmes, Assistant Director of Personnel, Director of the Testing Bureau, Ames.
4. *Progress report in biology.* Richard Trump, High School, Ames.

ZOOLOGY

1. *Some factors influencing waterfowl concentrations on the Mississippi River in Iowa.* Thomas J. Morrissey, Davenport.
2. *Paraperanema longicauda, n.g., n.sp. (Protozoa; Euglenida; peranemidae).* Fae M. Shawhan, Des Moines, and Theodore L. Jahn, Iowa City.
3. *Protozoa known to occur in Iowa.* Fae M. Shawhan, Des Moines, Leland P. Johnson, Des Moines, and Theodore L. Jahn, Iowa City.
4. *A photochemical basis for certain visual phenomena.* Theodore L. Jahn, Iowa City. (Read by title.)
5. *Effect of early estradiol injections on the development of male and female golden hamsters, Cricetus auratus.* Stanley G. Solpe, Iowa City.
6. *Prostates of the female cotton tail, Sylvilagus floridanus.* Jane G. Elchlepp, Iowa City.
7. *The temperature of the mouse in health and disease.* J. A. Weir, Ames.
8. *Temperature changes in the chick during the course of Fowl Typhoid.* A. E. Bell, Ames.
9. *A spectrophotometric study of a developing egg (Orthoptera) with especial reference to riboflavin and its derivatives.* J. H. Bodine and L. R. Fitzgerald, Iowa City.
10. *Pollen germination in relation to group size.* H. W. Beams and R. L. King, Iowa City.
11. *An ant colony which moved over two hundred feet.* R. M. Sallee and R. L. King, Iowa City.
12. *The introduction of the Belgian Schipperke to the United States.* Max Beemblossom, Mount Pleasant.
13. *Late fall and winter bird records for 1941 to 1947 in the Upper Missouri Valley.* T. C. Stephens and William Youngworth, Sioux City.
14. *Stool examination of fifty overseas war veterans in attendance at Iowa State College.* E. R. Becker and Reynolds Emerson, Ames.
15. *A new stylet cercaria found to be lethal to fish.* F. G. Brooks, Mount Vernon.
16. *Two new species of schistosome-dermatitis-producing cercariae.* F. G. Brooks, Mount Vernon.
17. *Periodical Cicada in Iowa in 1946.* D. E. Hardy, Ames.

JUNIOR ACADEMY OF SCIENCE OF IOWA

1. Tours to points in Cedar Falls.
2. General Program.
 - (a) 2:00-2:45 Demonstrations of exhibits.
 - (b) 2:45-3:15 Reading of essays.
 - (c) 3:15-3:50 Demonstrations of exhibits.
3. Business meeting for delegates.
Campus tours for non-delegates.
4. Banquet.
5. *Feathers through the Lens*. DR. ROBERT VANE, Cedar Rapids, Iowa.
6. Reading of essays.
7. *Scientific Exploration in South Ameroca*. DR. MARTIN L. GRANT, Cedar Falls.
8. Business meeting for delegates.
Discussion of club activities for non-delegates.
9. Recognition of essays and exhibits.

