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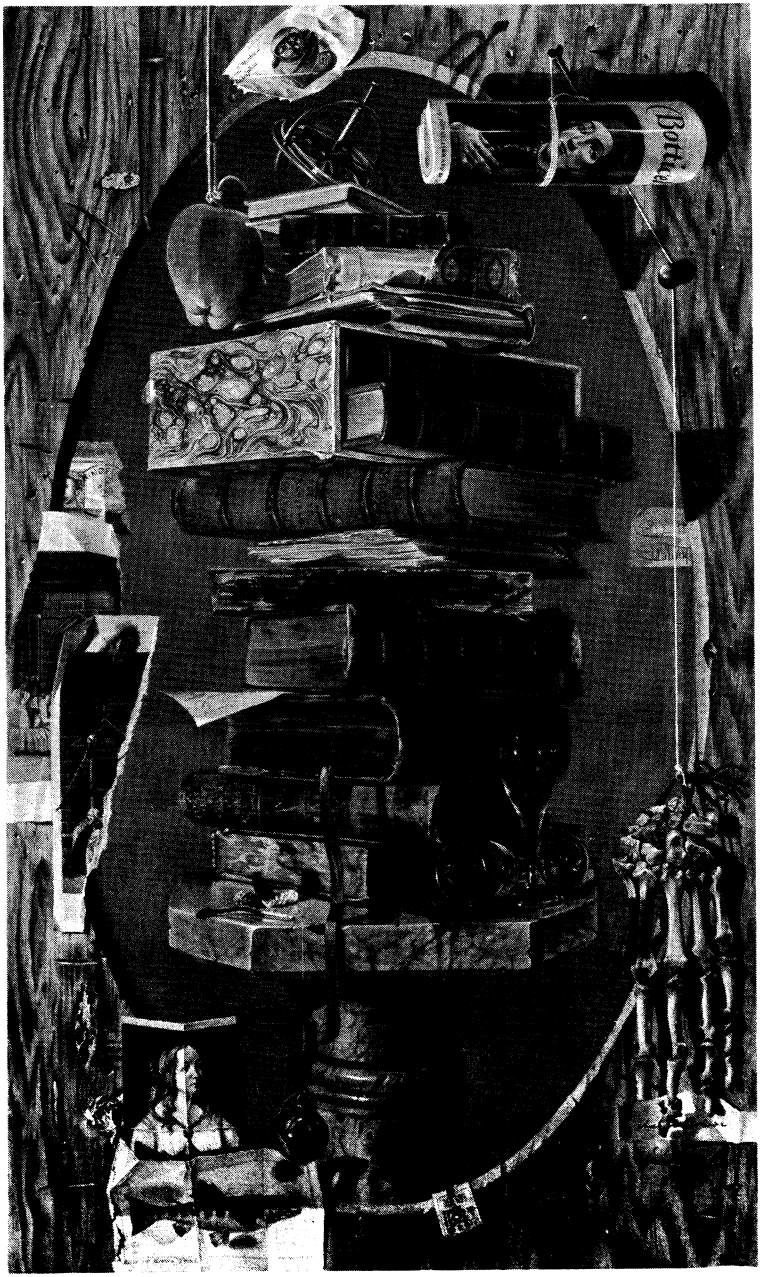
WISCONSIN ACADEMY REVIEW



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SUMMER, 1955

WISCONSIN ACADEMY REVIEW
Vol. 2 Summer, 1955 No. 3

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THE RESTORATION OF AZTALAN

By Chandler W. Rowe, Chairman
Department of Anthropology
Lawrence College, Appleton

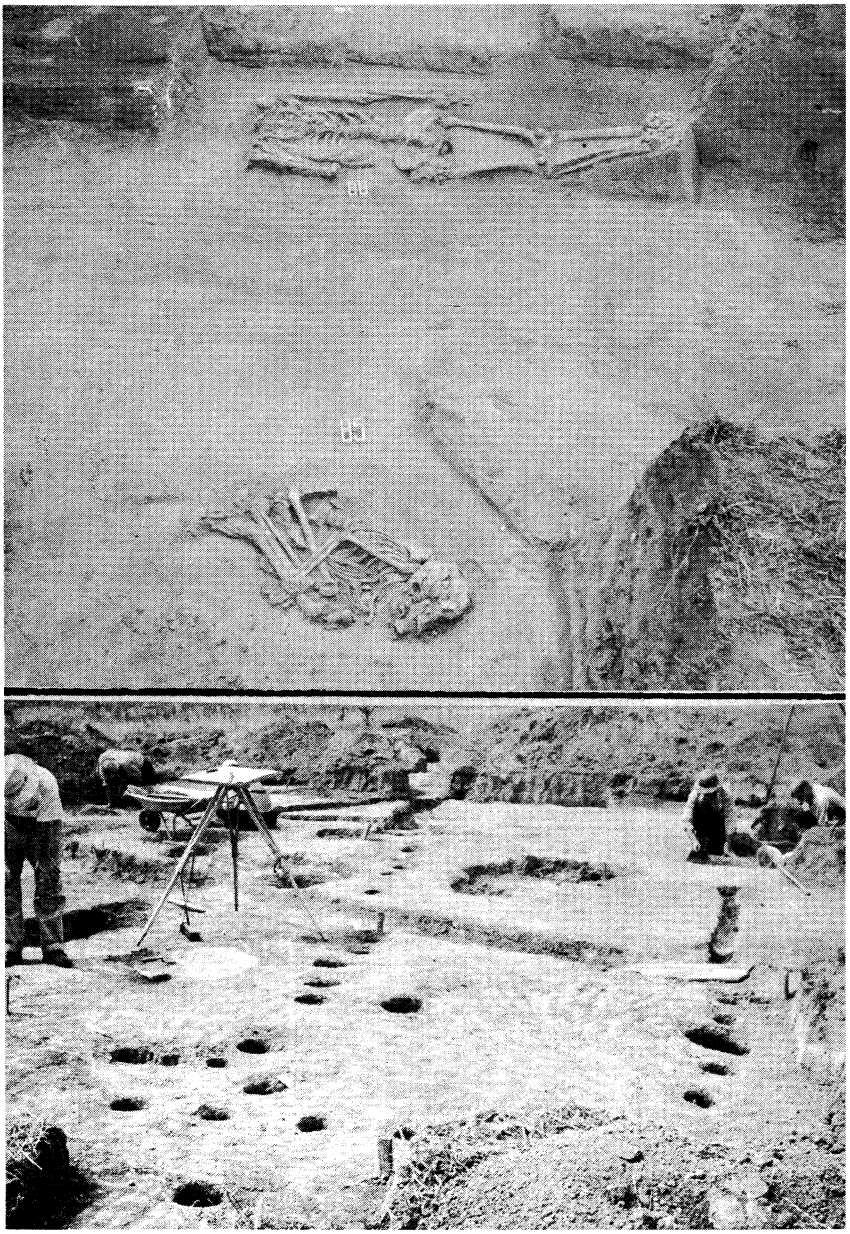
Quite recently a new state park has appeared on the Wisconsin road maps. Twenty-five miles east of Madison and two miles south of Lake Mills, Wisconsin, the State Conservation Department has purchased a tract which includes about forty acres of land once the site of a large and flourishing Indian village. With the help of the Wisconsin Archaeological Survey (the group which has supplied the necessary data for restoration), the reconstruction of this early Indian village has begun.

Although interested persons have been trying to have the land set aside because of its historical value since the time of President Buchanan, it was not until 1949 that the state of Wisconsin moved to purchase the site. Since that time things have developed rather rapidly toward the goal of total reconstruction.

Briefly, the pre-history of the village of Aztalan is this: a group of Indians living in the southeastern part of the United States (at an unknown time) left their homeland and journeyed up the Mississippi River to the present site of East Saint Louis. Later, another group split off from here and made its way up the Illinois River to the Rock River and finally settled on the west bank of the Crawfish River, the present location of Aztalan State Park. Here a colony of about 1000 people lived by agricultural means, supplementing their diet through hunting and fishing, for approximately 100 years (between the years of 1400 and 1500 A.D.). By the time the first European explorers appeared in the region, the Indians of Aztalan had disappeared, leaving behind no clue to their fate.

The information upon which the restoration of Aztalan will be based is derived from the excellent work done by Dr. S. A. Barrett, then director of the Milwaukee Public Museum, and the further investigation carried out by the Wisconsin Archaeological Survey since purchase of the site in 1949.

To date two pyramids have been restored as well as a portion of the stockade. Additional information is available regarding house types and other features. In time the village will be restored to the extent that it will

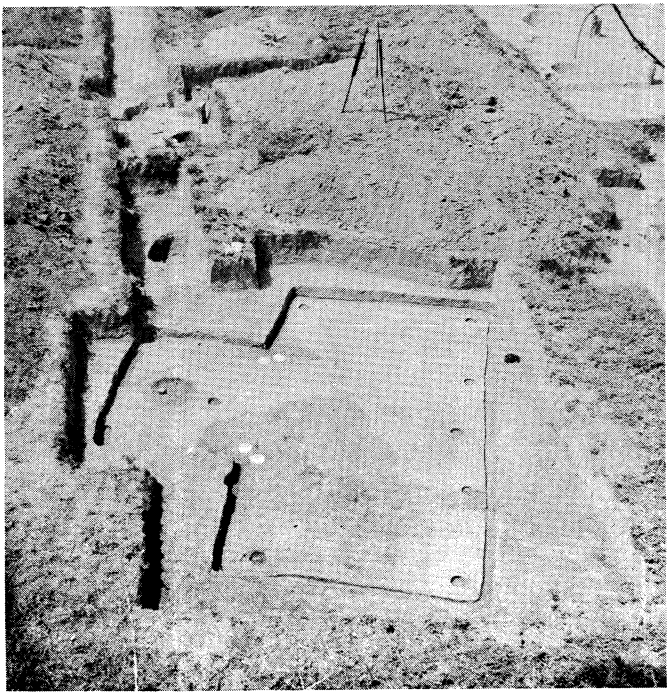


TOP: An excavated burial
BOTTOM: A general view of excavation showing postholes

provide a rather complete picture of the way of life of an agricultural group from another region who chose to live in what is now southern Wisconsin.

The Wisconsin Archaeological Survey, composed of Beloit College, Lawrence College, the University of Wisconsin, the Milwaukee Public Museum, the State Historical Society, Neville Museum, the Oshkosh Museum, the Rahr Civic Center and the Wisconsin Conservation Department, has been interested in the site as a portion of Wisconsin's pre-history. Many questions, such as the location of the Aztalan burial ground, the extent to which the people of Aztalan became acculturated with the local Indian groups, and what actually happened to the Aztalanians, are still unanswered and, it is hoped, the solutions lie buried in the as yet unexcavated portions of the site.

At any rate, Aztalan, when restoration is completed, will be a unique park in the United States and a credit to the state of Wisconsin.



ABOVE: A view of a rectangular house of a type found frequently at Aztalan.

RESEARCH IN WISCONSIN STATE AGENCIES

By Clara Penniman*
Political Science Dept., UW

During the past year the National Science Foundation, established by Congress in 1950 to "develop and encourage the pursuit of a national policy for the promotion of basic research and education in the sciences," has undertaken to inventory research efforts in the nation. The Foundation divided its work into research carried on by the national government, by non-profit institutions including universities and colleges, by the private sector of the economy, and by the states exclusive of state support of universities and colleges. Upon completion of the studies, some publication of the findings in each of the four areas will be made.

Wisconsin was selected as one of the six states (California, Connecticut, New Mexico, New York, and North Carolina were the others) in which an inventory of research in state agencies would be made. Although by definition the University generally was excluded from the study of state agencies, the Agricultural Experiment Station was included. Assistants on the project interviewed department and division heads to secure information on the amount and type of research carried on, the funds used, the number of man-hours devoted to research activities, and the general climate for research efforts.

One of the serious problems in gathering information on the state's research was to explain to administrators what was meant by "research." The word "research" and the classifications of "basic" and "applied" research do not achieve precision when handled by men constantly engaged in scientific activities. It is even more difficult to give preciseness to such words for use in a situation where the agency activities are diverse and "research" tends to be in some part incidental to operating functions. The general definitions, and their qualifications, of research activities as adopted by the Foundation used more words than this article. Classification included conduct of research and development (whether basic, applied or developmental and whether in the life, physical, or social sciences); planning and administration; data collection;

* - Miss Penniman is an assistant professor of political science at the UW and was State Study Director for the project described in this article.--Ed. Note

scientific information; training of scientific manpower; and testing and standardization.

A few tentative findings of the study in Wisconsin can be summarized rather briefly. During the fiscal years 1953 and 1954, Wisconsin state agencies other than the University spent approximately $1.2 and $1.4 million in research and other scientific activities. The Agricultural Experiment Station spent an additional $3.2 and $3.5 million in the two fiscal years. Among the state agencies, the Highway Department, the Conservation Department, the Department of Agriculture, and the Industrial Commission made the large expenditures for research activities. Other state agencies had expenditures for research and other scientific activities in an amount of less than $100,000 in each of the two fiscal years.

With the single exception of the Public Welfare Department, the state agencies receiving the large federal grants-in-aid were also the state agencies spending the substantial amounts for research activities. Particular provisions of federal grants have tended to encourage the use of federal and state moneys for research efforts in the functions of these agencies. It is, however, also true that Wisconsin would probably have made more funds available for research in the areas of highways, conservation, agriculture, and labor apart from the availability of federal grants for the purpose.

The study re-emphasized the fact that Wisconsin does organize more of its research effort within the University than do most other states. The fact that the State Geologist, Laboratory of Hygiene, and the University Hospitals with their associated research activities are a part of the University budget omits from our state study substantial research expenditures in particular areas. It is, moreover, true that the University or individual faculty members assume responsibility for other research interests of state agencies. The existence of the Highway Department's Materials and Testing Laboratory and the Welfare Department's Diagnostic Center on the Campus permits a constant interplay of state agency operating and research activities with University research interests.

# # #

FARRINGTON DANIELS RECEIVES GIBBS MEDAL

Dr. Farrington Daniels, chairman of the University of Wisconsin chemistry department and internationally known authority on atomic and solar energy, was awarded the 1955 Willard Gibbs medal, one of the highest honors an American chemist can be given. The award, founded in 1910 by William A. Converse, former secretary of the Chicago section of the American Chemical Society, was conferred on Daniels "because of his eminent work in, and original contributions to, pure and applied chemistry."

Harnessing the sun to do useful work by means of a solar engine or to produce electricity is Daniels' most recent area of research. He heads a coordinated research program on solar energy at the University of Wisconsin. Concerned with the increasing shortage and eventual depletion of our natural fuel resources, Daniels views energy from the atom as a solution for the near future; power obtained from sunlight as the biggest hope for the distant future. He has recently returned from a world lecture tour on which he discussed the ways and means of utilizing solar energy.

As chairman of the department of chemistry at the University of Wisconsin, as a past president of the American Chemical Society, and through his many books and writings, the stimulation and education of young chemists has been one of his primary concerns.

Farrington Daniels was born in Minneapolis in 1889, and having decided to become a chemist while in high school, took his first major step in that direction by obtaining a B.S. degree from the University of Minnesota in 1910. In 1914 he completed his work for the Ph.D. at Harvard. The fixation of nitrogen, important in the manufacture of fertilizers, occupied his attention early in his chemical career. This work led to many years of research on chemical reactions in the gaseous phase, for which Daniels is perhaps most famous.

Appointment to the chairmanship of the department of chemistry at the University of Wisconsin came to Daniels in 1952 after 32 years of service, 24 of which were at the rank of full professor. In the years 1944-45, he served as director of the Chemical division of the Metallurgical (atomic energy) Laboratory of the University of Chicago. In 1945-46 he was director of the Metallurgical Laboratory and later, when it became the Argonne National Laboratory

under the Atomic Energy Commission, he was chairman of the board of directors from 1946-48.

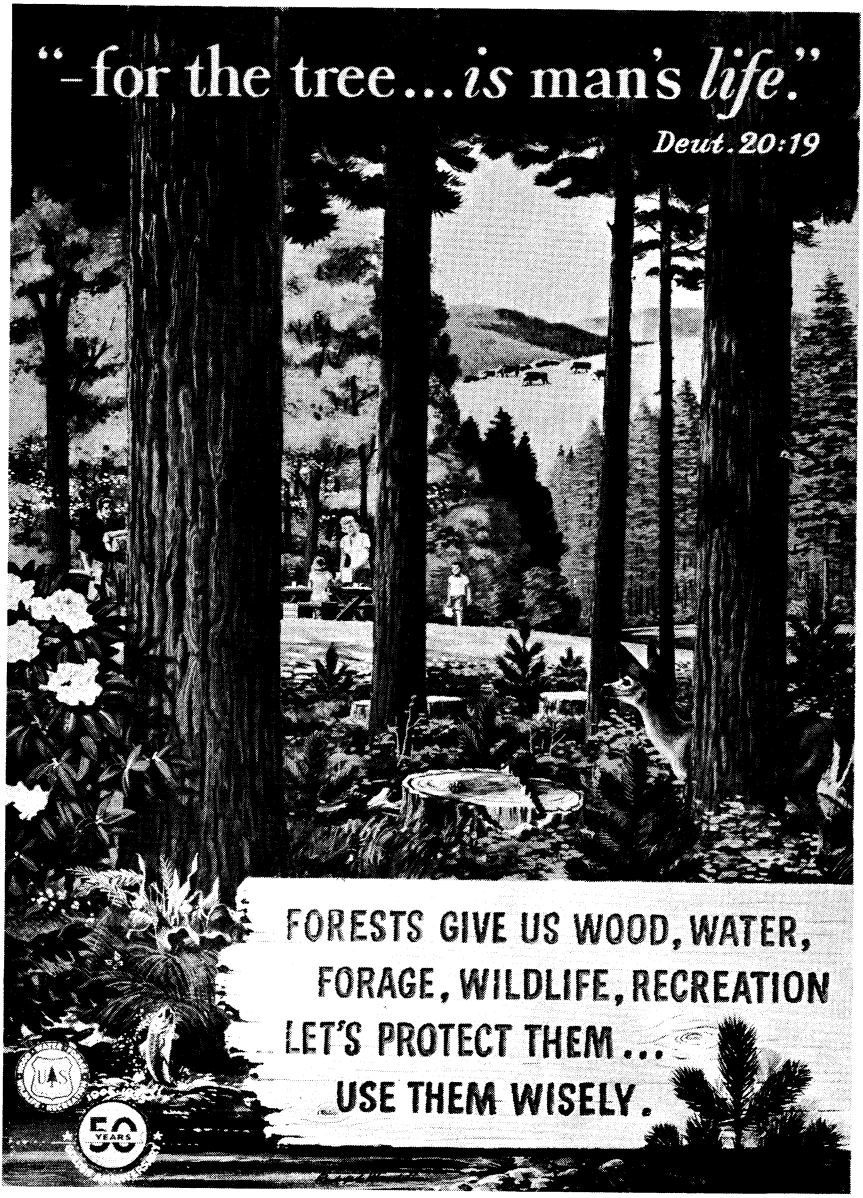
Daniels has been a leader in research aimed at the industrial utilization of atomic power and the development of uranium sources. His work includes the development of new methods of exploration, new systems for uranium recovery from low-grade ores, and studies on the availability of uranium in nature. Currently, he has turned from direct atomic energy studies to the investigation of solar energy.

A man dedicated to science and education, Daniels is a member of the National Academy of Science, the American Philosophical Society, AAAS, Sigma Xi, Alpha Chi Sigma, and the Farady Society. He is a past chairman of the Wisconsin Section of the American Chemical Society and remains active in section affairs.

In his acceptance address, Daniels said that "applied research is completely helpless without a continuing stream of fundamental research to feed on. Applied research, of course, often returns the compliment and initiates and encourages fundamental research." He added that he looked forward to the time when his fundamental research "will have been applied successfully to new technologies and new industries which will promote the world's well-being."

# # #

EDITOR'S NOTE on the Front Cover - Since its completion early in 1954, our front cover painting "Pillar" by AARON BOHROD has been a much travelled work of art. First exhibited at a special REALITY and FANTASY exhibition organized by the Walker Art Center of Minneapolis, it became an important feature of the artist's one man exhibitions in Chicago, Madison and New York. It has been reproduced in the catalogue of the Walker show and in the Milwaukee Journal, the New York Herald Tribune and recently in color in the magazine section of the New York Times.


"-for the tree...is man's life."
Deut.20:19
FORESTS GIVE US WOOD, WATER,
FORAGE, WILDLIFE, RECREATION
LET'S PROTECT THEM...
USE THEM WISELY.
50 YEARS

THREE ANNIVERSARIES IN FORESTRY

By Hamilton K. Pyles, Chief
Information & Education Div.
U.S. Forest Service, Milwaukee

This year of 1955 we are observing the golden anniversary of the United States Forest Service to remind the American people of their determined action in 1905 to bring about protection, management, and continuing development of their forests and related resources. In marking its 50th anniversary, the Forest Service wishes to pay tribute to state forestry departments, forest industries, forestry schools, conservation organizations, and all forest-land managers, private and public alike, who have contributed to progress in forestry during the past half-century.

Last year in 1954, we observed the 25th anniversary of the North Central Region of the Forest Service, with its nine-state headquarters in Milwaukee. A similar objective of the silver anniversary was to remind the people of our Lake States and Central States of the progress that had been made in forestry during the past 25 years by both private and public agencies, and to set a course for greater progress in the next 25 years.

Two years ago, in 1953, Wisconsin observed the silver anniversary of the Commercial Forestry Conference first conducted in 1928. The objective was to bring together all forestry interests of Wisconsin to review past accomplishments, to develop basic policies, and to focus public attention on the present and future economic significance of forestry to the state. The three anniversaries had a common purpose: to help the American people gain a better understanding of their dependence upon water, wood, forage, wildlife, and recreation provided by forested lands.

It was the first Wisconsin Commercial Forestry Conference in 1928 that sounded the keynote for a new forestry enterprise in Wisconsin, and set the stage for the creation of new national forests in the Lake States of our north-central region. For 60 years prior to 1928 the groundwork of legislation and forestry activities was being laid, in an effort to formulate a program that would meet the needs of the American public. Nationwide policies and programs in 1928 had come to encompass not only national-forest administration, but the broad field of federal cooperation with state and private interests.

The first conference secured common acceptance of principles that would assure progress in the development and wise use of the commercial forest lands of Wisconsin. From these principles the conference outlined a broad program of objectives to be achieved by cooperation between government, industry, private-land managers, and the people of Wisconsin. This program was discussed in the official report of the conference entitled "The New Outlook." The North Central Region of the Forest Service, created one year later, played an important part in implementing the program proposed by that first conference.

The authority for establishing a national forest in Wisconsin existed in the enabling act of the State of Wisconsin and a federal proposal for three purchase units. The endorsement of the 1928 forestry conference urged "localities approved by the federal government to cooperate in establishment of such a forest," and an acquisition program was initiated.

The first national-forest lands were bought in 1930, and by 1940 the greater part of the suitable land within the Weeks Law boundaries of the Chequamegon and Nicolet National Forests had been approved for purchase. Since 1940, land has been acquired primarily to block out contiguous areas of both public and private ownerships for more efficient management.

These anniversaries marked a period of major social and economic change, and a period of great scientific advancement in forestry and wood technology. It was a period in which a new look was taken at our natural resources, a time when the need to place new emphasis on the intelligence with which we use our resources became clear.

Today the Forest Service is entering upon a new period and has three major programs in the state of Wisconsin:

(1) Research, dealing with the growing and utilization of forests, is a major branch of the Forest Service. The Forest Products Laboratory at Madison, established in 1910, is the world's principal institution for research in the utilization of wood. The Lake States Forest Experiment Station, with director's headquarters at St. Paul, Minnesota, has research centers in each of the Lake States, and a recently-established center in Wausau where experimental work in Wisconsin will be directed toward finding new methods and practices.

(2) A second program is one of

cooperation with the states and with forest industries. This work is directed by a regional forester in Milwaukee for the nine states of the north-central region. Cooperation in protecting state and private forest lands from fire began under the Weeks Act of 1911. Later it was expanded under the Clarke-McNary Act of 1924 to include the production and distribution of forest-planting stock. The Cooperative Forest Management Act of 1950 authorized federal cooperation with the states in providing technical assistance to owners of private forest lands and to the processing of forest products.

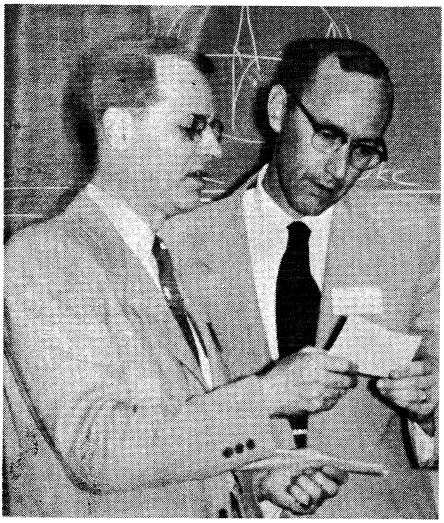
(3) The third Forest Service program is that of national forest administration. The regional forester in Milwaukee heads this work as well as the cooperative program. There are 14 national forests in the north-central region administered by 10 forest supervisors. They include the Chequamegon and Nicolet in Wisconsin; Chippewa and Superior in Minnesota; Ottawa, Hiawatha, Marquette, Manistee, and Huron in Michigan; the Wayne in Chio; the Hoosier in Indiana; the Shawnee in Illinois; and the Clark and Mark Twain in Missouri. Two states, Iowa and North Dakota, have small purchase units, both inactive. The land managed by the Forest Service and owned by the Government in these nine states includes approximately 8,855,000 acres, of which 1,464,000 are in Wisconsin.

The national forests of Wisconsin play an important part in the natural resource economy of the state. The goal in managing these lands is to integrate timber production, watershed protection, wildlife habitat, recreation use, and various other uses with the long-term capabilities of the soil. It is up to the district ranger to determine priority in land use and to resolve conflicts in the best interests of all the people in the long run.

The three anniversaries have served a good purpose. More people know what is going on in forestry because of their observance and the activities associated with them. No matter how much specialized scientific know-how we may possess in managing forest lands, social laws, public knowledge, and the economic laws of supply and demand govern our abilities to put scientific knowledge into practice. Looking back, we see that encouraging progress has been made; looking ahead, we see much more to be done if full productivity of our forest lands is to be attained.

# # #

EDITOR'S NOTE on the Back Cover - The back cover for this issue is a reproduction of the "Ancient Works at Aztalan" --plate 34 of "The Antiquities of Wisconsin" published by the Smithsonian Institution (1855). It is historically significant in any study of Aztalan.



JOSEPH G. BAIER, Jr., new President of the Academy, with CLIFTON G. KROEBE at Milwaukee meeting, May 6, 1955.

A NEW YEAR OF ACTIVITY

By Joseph G. Baier, Jr.
President

The Wisconsin Academy of Sciences, Arts and Letters is entering a new year of activity. As a member you can be justifiably proud of the past successes of the Academy. But, as a member, you should not rest upon already achieved laurels; instead, you should look forward to means of expanding and improving current activities and of inaugurating new fields of endeavor.

As your new President I need your help; I need your suggestions and advice to help guide the Academy in the direction you desire. The strength of the Academy does not lie in the hands of the Council, of the elected officers, of the various committees, and least of all in the President. Rather, the members of the Academy are the all-powerful personnel; we others merely carry out your wishes.

Since strength lies in the membership, it is imperative that the membership be as large and as strong as possible. May I offer one suggestion to you, in return for the many I expect to receive. May I suggest that each member during the present year bring into membership at least one person. Surely we each have a friend worthy of membership; and it might be a surprise to find that this friend is anxious to join the Academy too. As your new President I will want to see this year as productive toward improved and expanded Academy work as you will.

CONSERVING THE HUMAN HABITAT*

By G. B. Gunlogson
Racine, Wisconsin

In 1800 the area of Wisconsin comprised 56,000 square miles of virgin wilderness, woodland, lake and prairie. A few Indian tribes had lived here for centuries and had become a part of the wilderness. A few hundred white men had arrived but, for all practical purposes, population and its impact on the wilderness and virgin resources were negligible. Today the area is still 56,000 square miles but the population has grown to more than three-and-a-half million people. During these years great industries have grown, prosperous farms have been hewn out of the wilderness, and marked advancements have been made in most areas of human welfare. All this enterprise, of course, has transformed the landscape. Much of the wilderness has vanished and nearly all the virgin forests have disappeared.

It has become quite clear that agriculture and industry in the United States now possess the skill and imagination to expand production of food and other material goods sufficiently to support over one-half billion human population. And beyond this, there are students of chemistry and nutrition who are convinced that a still higher population can be supported if the need arises. Only recently, nuclear experts have confided that we are on the threshold of great developments in the related fields of energy and resources. I mention these facts because they are pertinent to the present situation and the trends with which we must deal in the future.

The population in Wisconsin and elsewhere in the country is currently expanding at something between two and two-and-a-half million a year. As this pressure continues, what will be the impact on Wisconsin as a place to live--on the character of the state, its landscape, parks

and nature areas? And what effects will deterioration of these areas have on the quality of human life?

The pressure at first will not be felt at the centers of population--in cities or even the suburbs. There, it may be a matter of enlarging a two-story apartment with added floors or of building on vacant lots. Moreover, the trend may be welcomed as an economic growth. The pressure is felt in the hinterland, on our sanctuaries, wilderness areas and the entire countryside. Those of you who know Northern Wisconsin have seen the year-by-year changes there. The decline in nature values in certain areas, no doubt, has been disturbing to some of you. Obviously, the traffic does not originate locally but comes almost entirely from cities of high population in Wisconsin and surrounding states. Possibly a formula could be devised which would reflect rather precisely the relationship between population concentrations and pressure on the Flambeau, Brule and similar areas.

The urge to seek enjoyment and relaxation amidst woods and waters is universal. It is in terms of those human needs and desires that we must evaluate the human habitat. People who live under the regimen of concentrated and organized society want to reach out for a different environment if only for a brief change. In the United States we have been blessed with unlimited choice of recreational areas that are rich in natural qualities. The fact that most of the people are able to enjoy these natural advantages is one of our great national assets. Every year several million people visit these places in Wisconsin. There were over 150 million admissions to our National Parks last year.

Every year countless convalescents seek the green chemistries of living nature to gain strength and new hope. Millions of boys and girls go to camps. Including such large institutions as Boy Scouts, Girl Scouts, churches, Y.M.C.A., etc., there are countless organizations providing funds and facilities for city children to enjoy the benefits that accrue from these experiences. Nor is there any substitute for the spiritual essence found in such surroundings.

Could it be that there is some instinctive alliance between man and his primeval vestiges? After all, his inherent makeup and all his senses acquired their form and fitness from long association with the compelling facts and forces of nature. Even his instincts and emotions were disciplined by her moods. The sounds which come to us from the wind in the trees, the rustle of leaves and the murmur of lapping water have not changed in a million

years. The infinite orderliness and continuity of nature are still the most abiding realities of life.

In America we have been endowed with this congenial environment, rich resources and much natural beauty. Here we have generous living space and opportunities for adventure and for the exercise of our talents. From these unique values we have derived our character and culture. When we preserve these values we are preserving our way of life. As a nation we are approaching a stage of maturity. There are no more geographical frontiers left and the population, already large, is becoming more homogeneous. We are becoming increasingly geared to technology and to mass psychology with the inevitable tendency for our individual personalities and our very souls to become enmeshed in the gears.

Material progress does not mean that the human being must lose his sense of reality. I believe we can do our part better in a modern world if we foster a religion and a culture which recognize the individual as a part of an infinite universe rather than as a cog in a sprocket. In the development of educational processes to meet our cultural needs in the future, I believe that nature areas dedicated to inspirational and educational purposes may become important adjuncts to church and school.

Now these more or less inter-related considerations suggest three concluding observations: 1) Population pressure will tend to impair the quality of this natural environment unless more effective measures can be devised than heretofore to preserve its integrity. This is a most challenging conservation problem and one which should concern everyone. 2) We have arrived at a stage where we need to go beyond our small groups to win support for our ideals and objectives. 3) With increasing population pressure everywhere, no nature areas or values can be permanently defended without public understanding and interest. The only permanent safeguard of these values we are talking about is an informed public.

The above are excerpts from a talk presented at the 1954 Annual Meeting of the Citizens Natural Resources Association in Milwaukee, Wisconsin. See p.45 for acknowledgment of copyrighted sketches.--Editor's Note.

C. L. FLUKE & Dr. PARKINSON

SCHOLARSHIP IN THE MODERN AGE*

By George A. Parkinson, Director
UW Milwaukee Extension Center

What I am really going to discuss might better be titled "The Socio-economic Status of the Scholar in our Modern Secular Society." Under this title I should like to briefly consider the following points: First, what is the economic status of the scholar in modern society? Second, what has the young scholar a right to expect from his scholarly training in our society? Third, what does contemporary society, and I specifically mean our own society, have a right to expect from the scholar it has created?

Our young scholar has in our contemporary society, an opportunity to select any one of a variety of occupations or positions which fall within the framework of his chosen aspirations. There are two basic reasons for this situation. One is that during World War II we limited the production of trained scholars and professional men in our colleges and universities. The second reason has to do with the fact that here in America we have an expanding society. As a metter of fact, this is true world wide. And we have a corresponding increase in the demand for scholars and professional men in all of our fields of industry, agriculture, business, and allied activities, which activities are reaching an almost phenomenal complexity.

What has a young man or young woman who is a potential and partially-trained scholar a right to expect from his education and training and from this opportunity which society has given him? He has a right to expect that if he has ability and if he applies himself diligently over a period of years, he will advance in scholarly stature and professional maturity, and he will advance in terms of his financial reward to a preferred scholarly status in our society. When I say scholarly status, I am talking about his social position or his social acceptance in the total structure of our society.

* - Excerpts from banquet address, 85th Annual Meeting.

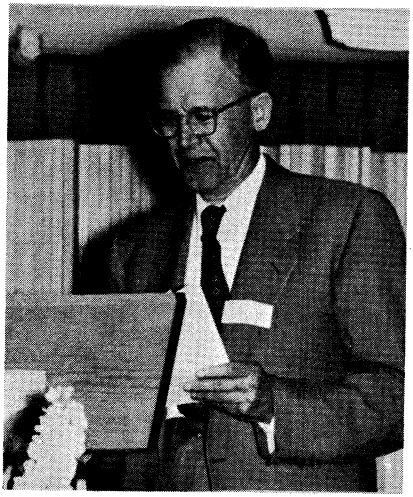
This scholarly status entitles our young men and young women to an opportunity to take their places as leaders in our society in fields other than their particular field of professional activity. There has never been a time in the history of the world when society has needed more desperately than it does now the leadership of trained, scholarly minds. Who is going to provide the leadership for survival? It is perfectly clear that in solving a problem of such complexity, such importance, and such imminence we cannot depend upon haphazard methods or fortuitous developments. It is perfectly clear that our solution must be characterized by mathematical precision and accuracy, that we must look far into the future, and that above all we must have the best trained scholars which our society can produce to develop the formulas and lay out the guide lines for survival.

Our scholar has a right to expect a formal education which will carry him as far as his abilities will permit. He has a right to expect an opportunity to work in his chosen field, and if he exercises competence, diligence, and persistence, he has a right to expect relatively adequate financial and economic reward. Further, he has a right to expect, and most certainly will attain ultimately, a position of social leadership, but he has a right to expect one other thing which is perhaps more important than any of these: spiritual and intellectual freedom. In referring to freedom, I mean liberty as distinguished from license.

What has society a right to expect from the scholar? It has a right to expect that he will be diligent and competent in his service to the organization which employs him and that he will be loyal to it and a good economic investment. The second thing that society has a right to expect is that he shall have the potential capacity for development into a highly trained, cultured gentleman. Third, that they shall have a creative imagination which will advance the bounds of knowledge and in fact the bounds of scholarship beyond the limits which existed at the time when they entered the field. I submit further that society has a right to expect social and spiritual leadership from its scholars to an extent which has not yet been demonstrated in our society.

It seems to me that if we can produce a class of scholars highly trained, broadly cultured, and fully accepted to positions of leadership in our society--a class of scholars in the finest sense of the word--and if they can give leadership to the social, psychological, and spiritual problems of this increasingly complex age, then we can rest assured that in the decades and generations to come our society will be strong, stable, and flourishing.

# # #



A BUSINESSMAN LOOKS AT NATURE*

By Ralph N. Buckstaff
Oshkosh, Wisconsin

Nature enters into Man's life in everything he does. With nature playing the part she does with our lives, how can man help but be interested in one or more phases of Nature Study? I am going to relate some of my own experiences in the different fields of Nature, as an amateur. Important records can be made by the amateur observers.

The first phase of nature I became interested in was birds. My father would often take me into the country and on these trips he would name the different birds we saw. Along about 1898 a new magazine called "Birds" came onto the market which, I believe, inspired me to continue to this day my interest in Ornithology. During the years I have been interested in Ornithology, I have found many changes in the pattern of bird life. Back in 1914, we began to hear a few Western Meadowlarks in the southwest part of Winnebago county; now they cover the entire county. The east side of Oshkosh used to be the nesting sites of many Flickers, Red-headed Woodpeckers, Yellow-bellied Sapsuckers and Crested Flycatchers. Since the coming of the Starling, this pattern has changed. The filling in of marshes and low places in the outlying parts of the city have deprived the marsh birds of their nesting places.

Another phase of nature I have found interesting is Entomology. Insects do millions of dollars worth of damage to crops, buildings and household goods. But on the other hand, many insects are very beneficial to Man. Insects collected in any one area are a record which will quite often help the professional Entomologist, who may want records of distribution of a family he is working on.

A third phase of nature which appeals to me is Meteorology. The amateur weather observers have an important place in the U. S. Weather Bureau. There are between 90 and 100 in Wisconsin who serve without pay, making daily

* - Excerpts from presidential address at Annual Dinner, 85th Annual Meeting, May 6, 1955.

observations of weather. I began observing in 1924 as a hobby; in 1926 I was named Co-operative Observer for the Weather Bureau, and have continued to the present time. Several years ago I analyzed all records (for the city of Oshkosh). Average daily temperature readings and number of below-zero days in a year were studied. The years 1900 to 1924 had a yearly average of 22 days below zero; from 1925-1949, 18 days; and the next five years showed a further decrease to 16 days per year. Precipitation is most important for agriculture and commerce. The yearly average up to 1930 was 29.30 inches; by the end of 1949 it had dropped to 28.63 and in 1950-54, to 26.41 inches.

To me, the most interesting of my hobbies is Astronomy. Certain phases of this science are well adapted for amateur work. I became interested in the observation of Mars and for this purpose built an eight-inch reflecting telescope. In August 1920, I joined the American Association of Variable Star Observers. Since starting observations of these stars in 1924 I have accumulated about 9,500 estimates of their brightness. The Sun offers a large field for investigation to the amateur. During the last World War, information was desired by the Armed Forces on any solar disturbance, and I joined with a number of other amateurs to get this data. It is found that during Auroral displays and other solar activity, radio and radar scopes are interfered with.

The Moon's surface offers an interesting spectacle of mountain chains and peaks, small craters, walled ring planes fifty or more miles in diameter, and wrinkled sea bottoms. Each day the scene changes as the sun rises on a different part of the Moon. Some of the mountain peaks cast spire-like shadows, the walls of the ring planes come out in relief, and the true rugged lunar surface is seen at its best.

Nature offers an endless source of interest in many fields. The pleasure, knowledge, and thrills one gains in finding something new to him, is well worth an effort. His observations will often be an aid to Science in some particular field. The businessman's troubled world ceases when he turns to nature study. I have found it so. Spend part of an evening at the telescope and you are in another world.

DOMAIN OF LETTERS

Collected by Prof. Ralph A. McCanse
Associate Editor in Letters

Both presentations in this issue are from Mrs. LOUISE HANLEY, of the English Department of the University Wausau Extension Center. Mrs. Hanley, in addition to appearing on the roster of University of Wisconsin staff members, is also listed in the American College Dictionary as Specialist in Synonyms and Antonyms for that publication and its Advisory Committee. Her poem was written "shortly after reading August Derleth's book."

WIND OVER WISCONSIN

We you call spirits
Once were called men;
Stop and remember us
Now and again.

We leave no footprints,
We cast no shadow
In the bright sunlight
On field and on meadow.

We are the wind
Sweeping over the prairies;
We are the wind
And the dust the wind carries.

We were Wisconsin
When forest and hill
Were free to the hunter;
And here are we still

Dwelling among you;
And still are we men;
Stop and remember us
Now and again.

---Louise Hanley

WHY CERTAIN SO-CALLED "ART" IS NOT ART

By Louise Hanley
English Department
UW Wausau Extension Center

Only a few years ago it used to be said that Art copies Nature, but differs from Nature in that selection is exercised. The creativeness of the artist was said to express itself in the elements selected (or details selected) and in the "composition" of these to make the beholder aware of significances or a meaning--often a meaning residing within his own experience and often one of which he had not been previously conscious. The purpose of true Art was not merely to inspire an appreciation of itself and an interpretation of itself. It evoked meaning in the mind of the beholder, if he were at all capable of perceiving relationships. It was "culture" -- and "cultivated" the beholder -- in that it inspired in him a synthesizing process; its significance to him helped him to integrate his own experience and to develop his ability to interpret that experience.

Few persons among us would attempt to build a house by laying on the ground piles of the various materials used in building one -- stone, lime, bricks, lath, siding, shingles, plumbing equipment -- and merely leaving them there. Nor if an excavation for the cellar had made a beginning for the house would they proceed by merely piling these miscellaneous materials helter-skelter in that excavation. They would understand that there must be a synthesis in which each type of material plays a part in relation to the others and in which each has its appropriate place or use; they would feel that a unifying plan must give significance to the parts and to the whole. No item would have, so far as the ultimate structure is concerned, any significance alone; each would gain significance because of its relationship to the rest; and together all would be perceived to have a significance far beyond that of any individual type of material intended for any conceivable use.

Yet some persons try to treat seriously certain types of modern Art, in spite of the completely disintegrated parts, the glorification of isolated elements, and the deliberate distortion of relationships -- when any at all are perceivable. In these types of art, every element in a given composition is consciously and purposely disjoined from every other. Discordant and jarring elements are tossed higgledy-piggledy in juxtaposition with one another -- seemingly to prevent or to make as difficult as possible any attempt to read significance of any sort into or out of the heterogeneous miscellany. Every time the observer

catches a glimmer of meaning, his attention is immediately distracted by a multitude of irrelevancies. The so-called work of Art of this type encourages scattering of attention; destroys attempts at concentration; and consequently destroys the possibility of constructive judgment, synthesis, or perception of principles.

It is possible in an art work for any one element, plus space, to have a significance of its own. That is, every beholder is free to relate the element to whatever he will. But when elements individually capable of having meaning, if in suitable relationships with others, are mixed indiscriminately together, all significance is destroyed; each interferes with the others; and the sum total interferes with the separate elements as well as with itself. It can be analyzed but it can never be integrated. It has, then, no more total significance as Art than any miscellaneous collection of scattered debris. Devotees insist that this is a new mode of thought not appreciated by traditionalists and temperamental conservatives. They apparently do not realize that it is retrogression to a primitive state of formlessness antedating all Art -- a state from which we had painfully struggled after centuries of effort.

# # #

THE VALUE OF THE PRIVATE LIBERAL ARTS COLLEGES

The following quotation from an address by ROBERT E. WILSON, Chairman of the Board of the Standard Oil Company (Indiana), is taken from a leaflet entitled "Their Future --and Yours," recently published by the Wisconsin Foundation of Independent Colleges, Inc.: "Our schools, of course, cannot long operate at a deficit any more than can any other element in our economy. If present conditions continue, we face the very real danger that many of these fine independent colleges, which have contributed far more than their proportionate share to the intellectual, religious, and scientific leadership of the nation, will be forced to close their doors just before the unprecedentally large wave of prospective students, now sweeping through the public schools, reaches the colleges.

"It is begging the question, it seems to me, to shrug off this possibility on the grounds that, if these schools close, their students would be absorbed by our tax-supported institutions. Would our tax-supported schools continue to do as good a job without the competition of private colleges? Would they be able to preserve their academic freedom from the inroads of political coercion? The Commission on Financing Higher Education, created by the Association of American Universities, has grave doubts on these points, and so have I."

# # #

THE ACADEMY'S 85th ANNUAL MEETING

(Milwaukee, May 6-7, 1955)
By R. J. Dicke, Secy.-Treas.

The Wisconsin Academy, in its 85th year, held its Annual Meeting jointly with the Wisconsin Junior Academy of Science at the University of Wisconsin's Milwaukee Extension Center on May 6 and 7. A total of 155 members and guests registered during the two-day session, and according to our records, this is the largest registered attendance during the past five years. Three sections of the Senior Academy were held during which 22 papers on scientific and literary subjects were read at the Friday sessions and on Saturday morning. Also on Saturday morning and afternoon, 12 science papers were presented by the Junior Academy. A list of these papers appears on page 48.

The Senior Academy's first section meeting was called to order at 9:45 a.m. by President RALPH N. BUCKSTAFF. Dr. GEORGE A. PARKINSON, Director of the University of Wisconsin in Milwaukee welcomed the Academy to the Extension Center and extended the good wishes of his colleagues. Dr. Parkinson's welcome was by no means a formal gesture. All of us who attended the meetings will attest to the informal and pleasant atmosphere of the Center and the warm hospitality of our hosts.

Presiding officers during the section meetings were our Vice-Presidents: Prof. J. G. BAIER during the Friday morning section, Mr. DON SCHLAFKE at the Friday afternoon section, and Dean F. C. YOUNG on Saturday morning. The papers presented represented many phases of study in the scientific and literary fields. It was especially encouraging to note that most of the papers served as an informative introduction and exposition of the academic interests of the speaker rather than a technical summation of results. The Junior Academy papers were an inspiration as usual to all of us who are interested in the intellectual development of our young men and women.

A brief Council meeting was held in the Faculty Lunch Room with eight Council members in attendance. The Annual Business Meeting was held at 4 p.m. on Friday with President BUCKSTAFF presiding. For a summary of the business meeting, turn to page 26.

Following the Annual Business Meeting, an informal Reception was held in the Library, providing an excellent opportunity to meet the faculty of the Center and visit with Academy associates. The Annual Academy Dinner was well attended, with 54 members and guests. Prof. C. L. FLUKE, Past President of the Academy, served as our genial toastmaster. President RALPH N. BUCKSTAFF in his presidential address, A Businessman Looks at Nature, summarized his career as an astronomer and biologist, the hobbies of an amateur which have contributed much to the scientific knowledge of our state. Prof. FREDERICK M. LOGAN, Chairman of the Department of Art Education at Madison, discussed the Fine Arts in a Scientific World, and Dr. GEORGE A. PARKINSON, Director of the Center, Scholarship in the Modern World. For excerpts from two of these excellent presentations, see pages 16 and 18. and arrangements are being made for a condensation of Prof. Logan's paper in a later issue.

Junior Academy Chairman JOHN W. THOMSON, Jr. introducing winners of Awards of Membership in the American Association for the Advancement of Science, KATHLEEN HABLE and NEIL KESTNER.

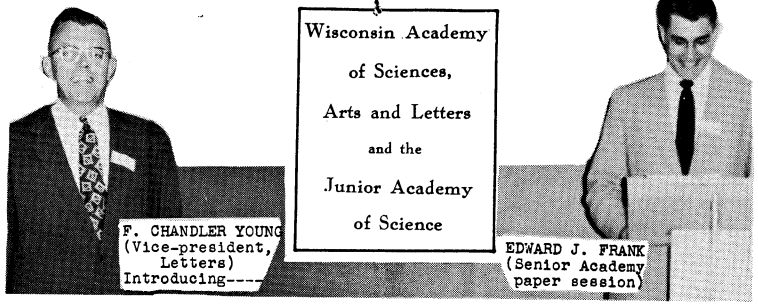
Co-presidents of the Junior Academy elected at the annual meeting: CAROL JOYCE and GARY KAZIUKEWICZ.

Local committee on arrangements (left to right seated): RUTH I. WALKER and MRS. HELEN J. KITTSLEY; (standing): MERLIN L. HAYES, PHILIP B. WHITFORD, J. G. BAIER, Jr. and DONALD K. GEHRZ.

DONALD A. DEVER presenting his paper "Biology and Ecology of the Cherry Fruit Worm in Wisconsin."

85 TH ANNUAL MEETING

Milwaukee Extension Division
University of Wisconsin
Photos by
Secretary ROBERT J. DICKE



F. CHANDLER YOUNG (Vice-president, Letters) Introducing----

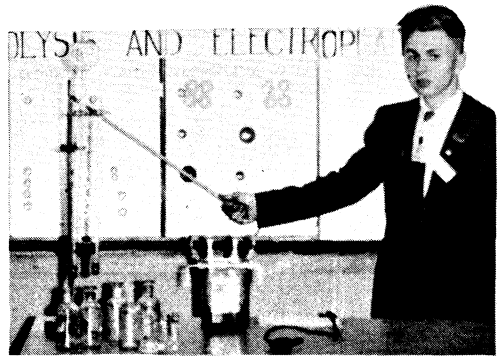
EDWARD J. FRANK (Senior Academy paper session)

Participants in the Junior Academy session (left to right) - ROBERT HARTWIG, MERWYN HEMP, DON BOELTER, NED COCHRANE, CHARLES HUTCHINS, GARY KAZIUKEWICZ, FRANK DUNN, GENE UEHLING, JOHN HARRIMAN, and TOM WERNER.

KARL O. WERWATH presenting his paper on "The Function and Future of the Technical Institute."

CHARLES HUTCHINS presenting his paper on " A Cloud Chamber. "

PROFESSOR FREDERICK M. LOGAN presenting his banquet address, "Fine Arts in a Scientific World." Others (left to right): MRS. GEORGE A. PARKINSON, former President RALPH N. BUCKSTAFF and MRS. RALPH N. BUCKSTAFF.



NEIL KESTNER presenting his paper on "Electrolysis of Solutions."

The excellent presentations by participants of this Annual Meeting assured its outstanding success. But much credit must be accorded to the local committees on Program and Arrangements and on the Reception for their thorough preparation and thought to the comfort of their guests and to the organization of the general program under the leadership of the Co-chairmen, Professor JOSEPH G. BAIER, Jr. and RUTH I. WALKER.

COUNCIL MEETING

A Council Meeting was held May 6, 1955 at the Faculty Lunch Room of the University of Wisconsin's Milwaukee Extension Center during the Annual Meeting of the Academy. Council members present were J. G. BAIER, Jr., R. N. BUCKSTAFF, R. J. DICKE, C. L. FLUKE, K. G. NELSON, L. E. NOLAND, D. SCHLAFKE and by invitation J. W. THOMSON, Jr., Chairman of the Junior Academy Committee.

The applications of 22 Active, 2 Sustaining and one Life memberships were presented and unanimously accepted by the Council. A list of 14 Active members in arrears in dues for two years was read. The Secretary was directed to notify these members that they have been dropped from the Academy, but may be reinstated at any time.

A notice from the AAAS was read, to the effect that future research grants (following 1955) will be awarded only to High School students. It was ordered that the 1955 grant be awarded to a Senior Academy member as in the past.

In discussing the increased duties of the Secretary-Treasurer, it was moved that the matter be discussed during the Annual Business meeting and that authority be requested to delegate certain obligations such as the editorship of the TRANSACTIONS to Committees appointed by the Council.

ANNUAL BUSINESS MEETING

The 85th Annual Meeting was held May 6, 1955 on the Campus of the University of Wisconsin's Milwaukee Extension Center. President RALPH N. BUCKSTAFF called the meeting to order at 4:00 p.m. The Treasurer's report was read and approved and is given in detail on pages 46-47. Reports of the Editor of the Review and the Membership Committee were read as reported on pages 29 and 28. A report by Prof. JOHN THOMSON for the Junior Academy Committee recounted the excellent progress of participants at the regional meetings and their recognition by the public.

The following Resolutions were presented by a committee composed of Mrs. ANNE B. LAY and Mrs. KATHERINE G. NELSON:

"WHEREAS: The Wisconsin Academy of Sciences, Arts and Letters has lost in death nine of its distinguished members during the year 1954-55, and

"WHEREAS: The Academy wishes to recognize its indebtedness for their inspiration, devotion and leadership,

"BE IT RESOLVED: that the Wisconsin Academy of Sciences, Arts and Letters herewith express its lasting appreciation for service given throughout the years by CHARLES E. ALLEN, HERMAN E. EKERN, NORMAN C. FASSETT, RICHARD FISCHER, WILLIAM O. HOTCHKISS, ELIZABETH A. OEHLENSCHLAEGER, CLARENCE H. PRATT, BENJAMIN S. REYNOLDS, and GEORGE WAGNER and

"BE IT FURTHER RESOLVED: that a copy of this Resolution be inscribed in the official minutes of the organization."

"WHEREAS: the Wisconsin Academy of Sciences, Arts and Letters has enjoyed a successful 85th Annual Meeting at the University of Wisconsin's Milwaukee Extension Center,
"BE IT RESOLVED: that the Secretary be instructed to express our appreciation and thanks to our Colleagues of the Extension Center for their generous hospitality."

A slate of officers for the year 1955-56 was presented by the Nominations Committee as follows:

President: JOSEPH G. BAIER, Milwaukee
Vice-President (Sciences): STEPHEN F. DARLING, Appleton
Vice-President (Arts): AARON BOHROD, Madison
Vice-President (Letters): ROBERT H. IRRMANN, Beloit
Secretary-Treasurer: ROBERT J. DICKE, Madison
Librarian: GILBERT H. DOANE, Madison
Publication Committee: RALPH A. McCANSE, Madison
Membership Committee: JAMES PERRY, Chm., C. L. FLUKE, DON SCHLAFKE, WALTER SYLVESTER and R. J. DICKE.

It was moved and passed that a unanimous ballot be cast for the entire slate.

The duties of the Secretary-Treasurer were reviewed and the following action taken:

1. Transfer the duties of editing the TRANSACTIONS from the Secretary to an Editor appointed by the Council. The following amendment to paragraph 8 of the By-Laws was passed:
   "An editor of the TRANSACTIONS shall be appointed by the Council and he shall be charged with the special duty of editing and overseeing the publication of the TRANSACTIONS. In the performance of this duty he shall be advised by the Committee on Publications."

2. Responsibilities of programming and arrangements for the Annual Meeting be delegated to the local Committee on Program and Arrangements.

3. Responsibilities for the sale of back issues of the TRANSACTIONS and all separates be delegated to an Academy member appointed by the President.

The meeting was adjourned at 5:11 p.m.

NEW MEMBERS

The following applications for Life, Sustaining and Active membership have been received and accepted by the Council:

Life - HENRY TIEDEMAN, New York, N. Y.
Sustaining - WILLIAM D. McCAY, A. O. Smith Corp., Milwaukee
ANTON A. SCHNEIDER, Horicon
Active - DANA K. AKERS, Wis. State College, Superior
Mrs. HELEN L. AKERS, Superior
CHESTER ALLEN, Univ. of Wisconsin
JAMES D. ANTHONY, Wis. State College, Milwaukee
VINCENT S. BAVESOTTO, Paul-Lewis Lab., Inc., Milwaukee
GORDON O. BESCH, Onalaska High School
Dr. BENJ. H. BRUNKOW, Monroe Clinic
MARIANNA CHERRY, Milwaukee-Downer College
CLAIR COLVIN, UW Extension Center, Racine

Active - CHARLES G. CURTIS, Beloit College
Cont'd ERIC KNEEN, Kurth Malting Co., Milwaukee
Mrs. LILLIAN MACKESY, Newspaper woman, Appleton Post-Crescent
LOWELL S. MILLER, Marathon Co. Hist. Soc., Wausau
R. H. MYERS, UW Extension Center, Milwaukee
AL P. NELSON, Delafield
OLIVER C. SAND, Fratney St. School, Milwaukee
EDWARD J. SMITH, Jr., Necedah Nat'l Wildlife Refuge
RALPH STUEBER, Wausau
EDWARD TAUBE, UW Extension Center, Racine
Mrs. ANNE M. TIETZE, Racine
FREDERICK I. TIETZE, UW Extension Center, Racine
MILTON WEBER, Carroll College, Waukesha

Fourteen applications for Active membership and one for Sustaining membership have been received since the Council meeting:

Sustaining - HOFFMASTER COMPANY, Inc., Oshkosh
Active - JACK BALTES, Globe-Union, Inc., Milwaukee
PAUL A. CARLSON, Wis. State College, Whitewater
Sister MARY EVELYN, Messmer High School, Milwaukee
CHARLES A. KEMPER, Chippewa Falls
L. H. KINGSTON, Green Bay
SAMUEL H. LIPTON, Burlington
Miss KATHARINE MARTINDALE, C.L.U., La Crosse
LAURENCE F. MOTL, Chief Engineer, WCD, Madison
ARTHUR A. OEHMCKE, Fishery Area Coordinator, WCD, Woodruff
RAYMOND J. PENN, Univ. of Wisconsin
PHILIP H. PERSON, UW Extension Center, Milwaukee
RICHARD G. SCHULZE, Greenville
JOSEPH H. STOECKELER, Lake States Forest Exp. Station, Univ. Farm, St. Paul, Minn.
JAMES H. ZIMMERMAN, Univ. of Wisconsin

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MEMBERSHIP REPORT, 1954 - 1955

Fiscal year ending:	1955	1954	1953	1952
PATRON	3	2	0	0
New members - - - 1				
LIFE	32	34	34	35
New members - - - 3				
Deceased - - - - 5				
SUSTAINING	6	0	0	0
New members - - - 6				
ACTIVE	551	391	332	327
New members - - 150				
Deceased - - - 2				
Resigned or dropped - - - 8				
(arrears in dues 2 years - - - 15)				
(family memberships - - - 31)				
LIBRARY	16	3	0	0
New members - - - 13				
CORRESPONDING	10	10	11	10
HONORARY	4	4	4	5
TOTAL MEMBERSHIP	622	444	381	377

DECEASED MEMBERS: Charles E. Allen, Herman E. Ekern, Norman C. Fassett, Richard Fischer, William O. Hotchkiss, Elizabeth A. Oehlenschlaeger, Clarence H. Pratt, Benjamin S. Reynolds, George Wagner.

REPORT OF THE EDITOR OF THE WISCONSIN ACADEMY REVIEW

Since the 84th Annual Meeting at Appleton when unanimous support was given to a motion to continue the Wisconsin Academy Review, four more issues have been prepared and distributed. They are in themselves a report of the editor and his staff. They also reflect the excellent cooperation which has been given to this project by members and reporters. Without this cooperation it would have been impossible to do this "spare time" job in a worthwhile manner.

The editor would like to call special attention to the assistance he has received from his Associate Editors, namely: AARON BOHROD in the Arts for cover selection, RALPH A. McCANSE for the "Domain of Letters" contribution, ROBERT J. DICKE for Senior Academy and Council reports and JOHN W. THOMSON, Jr. for news of Junior Academy activities. It has been a pleasure to work with many others on this project because of their willingness to cooperate and the high quality of the materials submitted.

In the coming year it can be expected that this project will continue along the same general lines if the members so desire. Some minor changes are contemplated in the use of the back cover and in priority of the content materials. An attempt will be made to include a wide variety of Wisconsin-interest articles in the offerings.

Any members having suggestions for Review notes or articles, or who may have constructive criticism of the publication, are urged to contact the Editor. Ideas for improvement are always welcome.

Respectfully submitted,
/s/ Walter E. Scott
Walter E. Scott, Editor
Wisconsin Academy Review

# # #

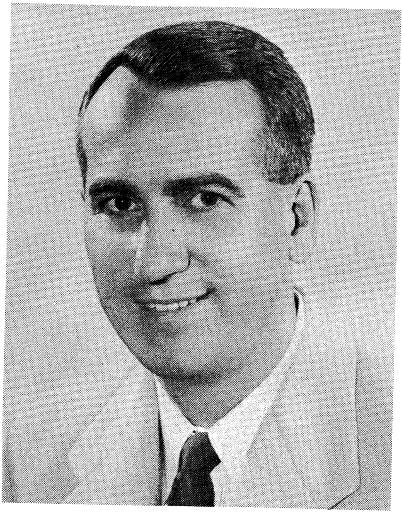
FASTEST ELECTRONIC CALCULATOR IN WISCONSIN

By P. C. Hammer, Director
UW Numerical Analysis Laboratory

The Numerical Analysis Laboratory of the University of Wisconsin has just received an I. B. M. Type 650 Drum Calculator. This is the fastest calculator in the state and the University of Wisconsin is the first university in the country to obtain this model.

The machine calculates electronically; the numbers and instructions to the machine being stored as magnetized spots on a metal drum which is four inches in diameter and sixteen inches long. This drum continuously rotates at 12,500 revolutions per minute. A total of 2,000 ten digit numbers is stored on this drum including numbers which the machine will interpret as orders to carry out certain operations. The machine will multiply the computing potential of the Numerical Analysis Laboratory by a factor of five.

The rental of the machine is paid by the Graduate Research Committee with use of Wisconsin Alumni Research Foundation funds. Thus the University of Wisconsin keeps ahead in the rapidly growing field of electronic computing. # # #



INTRODUCING CONSERVATION DIRECTOR L. P. VOIGT

LESTER P. VOIGT was recently appointed to the position of Conservation Director by the Wisconsin Conservation Commission. He began his career with the Conservation Department on April 1, 1947 when he was appointed Personnel Officer and more recently has served as Chief Administrative Officer and Acting Director.

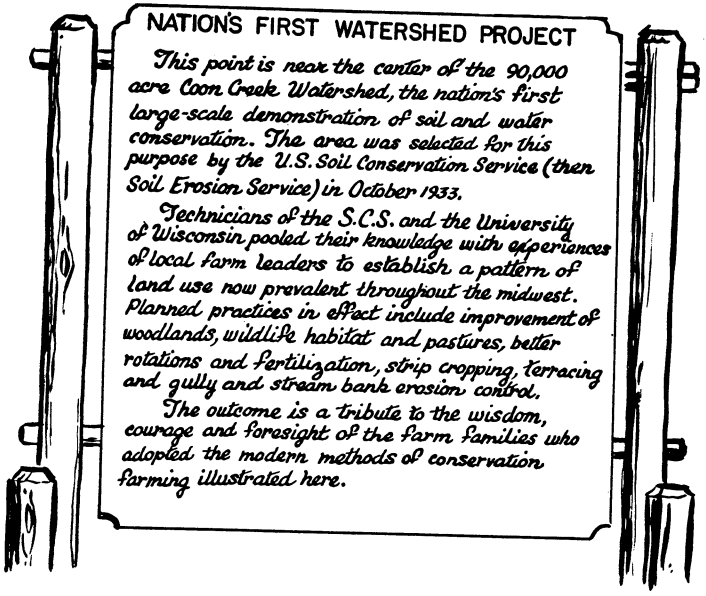
Eau Claire is his native home and he graduated from the local schools there. He specialized in Business Administration at the University of Wisconsin from where he secured B.A. and M.A. degrees in 1937 and 1939 respectively. During the period 1939 to 1942 he worked as a research associate with the Legislative Reference Library and a statistician with the Wisconsin Public Service Commission. From 1942 to 1946 he was in the navy. He became a Lt. Commander with special assignments on government contract supervision and negotiation.

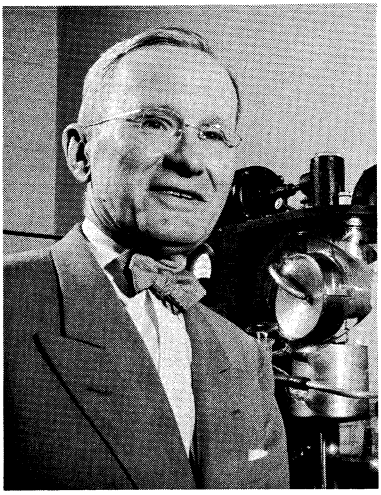
"LES" VOIGT brings to the job of Conservation Director an administrative background which may prove valuable in supervising the wise use of its ten million dollar annual budget. He also is expanding his interest in the biological aspects of this position so important to Wisconsin's future.

# # #

Historical Marker and Roadside Parkway

Dedicated July 19, 1955 Coon Valley, Wisconsin





HENRY A. SCHUETTE — CHEMIST

(A UW Retirement Profile by James A. Larsen)

During his 41 years on the University of Wisconsin chemistry faculty, Prof. HENRY A. SCHUETTE has held most of the offices and honors granted to those conducting research and teaching in the field of oil chemistry, including the presidency of the American Oil Chemists Society, chairman of the division of agricultural and food chemistry of the American Chemical Society, and--nearer home--president of the Wisconsin Academy of Sciences, Arts and Letters.

Schuette's scientific and scholarly interests were aroused early in life by his grandfather, a school teacher and musician. The Schuette family at Green Bay was tightly-knit. Life was, in many ways, a Spartan one. For the young Henry, Saturdays were devoted to instruction in the German language, training which continued until he entered high school--but this, indirectly, launched his career. Knowledge of German permitted him to substitute other courses for it--one course available was chemistry, in which he enrolled. "I had found my metier," says Prof. Schuette. "Chemistry was the field in which I would--if I could--make a career."

Graduated from high school, Schuette became a rural school teacher, although, he points out, "It would be more apt to say I kept school; I am sure I didn't do much of what could be called teaching." He "kept school" for four years, long enough to save tuition and room-and-board for a semester at the University. He enrolled, found part-time jobs during the subsequent four years, and was a member of the second Wisconsin class to graduate from the chemistry course. In Schuette's last year, Prof. RICHARD FISCHER, Wisconsin state chemist who taught pure food and drug chemistry, recognized Schuette's ability, and changed the time at which he presented his lectures to prepare Schuette to act as his teaching assistant the following year.

Schuette became an instructor in 1914, and two years later was granted his doctorate degree. In 1918 he married Jean Fyfe Frederickson, a Wisconsin alumna and reference librarian in the UW Extension Division. They have three children: Mrs. F. Chandler Young, Madison; John F. Schuette, Davenport, Iowa; and Henry G. Schuette, San Diego, Calif. Both sons are now prominent engineers.

During his years on the Wisconsin faculty, Prof. Schuette taught three courses--quantitative organic analysis, sanitary water analysis, and the chemistry of foods. No fewer than 265 students reached a degree under his tutelage; 33 attained the highest--doctor of Philosophy.

He has been a continual champion of legislation to improve standards for food and drugs. His research has resulted in 150 published scientific papers, some 60 concerned with the chemistry of complex substances known as fatty oils.

In his early years at Wisconsin, Schuette worked closely with famed limnologists E. A. Birge, who was to become a University president, and Chancey Juday--whose scientific studies made Wisconsin's lakes famous throughout the world. Schuette's doctorate thesis was on the chemistry of Lake Mendota's plants, an early study of the kind that paved the way for much present-day chemical knowledge of the food-cycle in nature.

Another project attracting wide interest was Schuette's study of the mineral content of honey. His discovery that southern honey has a greater content of iron, copper, and magnesium has no great nutritional significance--but it does account for the fact that northern honey is light in color, while honey from the southern states is of deeper hue.

In 1925, Prof. Schuette began work with the fatty oils and waxes, a study devoted entirely to improving knowledge of how these substances are put together. His research has been of importance to the drug, petroleum, oil processing, and packing industries. Recognition of his work came in 1940 when he was the first scientist from an academic institution elected president of the American Oil Chemists Society.

For eight years, Schuette also held the post of editor of The Chemical Bulletin, the journal of the Chicago section of The American Chemical Society. He has been a leader in Wisconsin's major scientific and scholarly organization--the Wisconsin Academy of Sciences, Arts, and Letters. He served as president of the Academy in 1944-46, and helped found the Wisconsin Junior Academy of Science--in which outstanding Wisconsin high school scientists glimpse the world of science by presenting papers on research projects at annual Wisconsin Academy meetings.

In recent years, Schuette has been unofficial historian of the Wisconsin chemistry department. He searched for--and assembled--a nearly complete collection of scientific papers published by the chemistry faculty since the first in 1885, in which Prof. E. S. Carr made a plea for greater recognition of the importance of science. The total collection comprises 35 volumes, and is prominent on the shelves of the chemistry department library.

When he retires, Schuette will embark on a project that could be undertaken only after a lifetime of preparation--he plans to write a history of the department at Wisconsin, its personalities, and the accomplishments which helped bring about the past century's progress in industry, medicine, and agriculture.

In an address to his colleagues of the chemistry department, he reiterated his conviction that the word "retirement" is a misnomer: "Attainment of chronological age 70 is no gauge of mental or physical ability--with responsibilities behind, there is much yet that can be done. What is better," he asks, "the full life of a retired professor or the half life of a tired professor?"

# # #

JUNIOR ACADEMY NEWS

By John W. Thomson, Jr., Chairman
Junior Academy Committee

In this issue we will review the statewide meeting, the junior high school meeting and the Wisconsin Talent Search results. The statewide meeting with the Senior Academy was held in the UW Extension Center at Milwaukee on May 7. Over 80 people attended. Awards of membership in the American Association for the Advancement of Science were made to NEIL KESTNER, Boy's Technical HS, Milwaukee, and KATHLEEN HABLE, Columbus HS, Marshfield. This will entitle them to Science Newsletter and Scientific Monthly for a year as well as to other privileges of membership in this national organization of scientists. Elected to membership in the Wisconsin Academy of Sciences, Arts, and Letters, were FRANK DUNN, Campion HS, Prairie du Chien, GARY KAZIUKEWICZ, De Padua HS, Ashland, GENE UEHLING, Aquinas HS, La Crosse, CHARLES HUTCHINS and NED COCHRANE, Neenah HS, DON BOELTER and MERWYN HEMP, Lincoln HS, Wisconsin Rapids, ROBERT HARTWIG, Messmer HS, Milwaukee and TOM WERNER, Bradford HS, Kenosha. These memberships will entitle the recipients to the Academy Review and the TRANSACTIONS of the Academy as well as to other privileges of the organization.

Through the generosity of one of the Academy Council members, Dr. A. W. SCHORGER, subscriptions to science magazines were awarded at the statewide meeting. For outstanding papers or projects a very wide selection was given to MERWYN HEMP, Lincoln HS, Wisconsin Rapids, GENE UEHLING, Aquinas HS, La Crosse, CHARLES HUTCHINS, Neenah HS, and TOM WERNER, Bradford HS, Kenosha. A selection of magazines was also awarded to NED COCHRANE, Neenah HS, JOHN HARRIMAN, Appleton Sr. HS, ROBERT HARTWIG, Messmer HS, GARY KAZIUKEWICZ, De Padua HS, Ashland, FRANK DUNN, Campion HS, Prairie du Chien, and DON BOELTER, Lincoln HS, Wisconsin Rapids.

Serving as judges at the statewide meeting were Mrs. KATHERINE G. NELSON and Dr. CHARLES L. FLUKE of the Senior Academy Council and Dr. PAUL MILLINGTON of the UW Milwaukee Extension Center.

Co-presidents of the Junior Academy elected at the annual meeting to serve during the coming year are CAROL JOYCE, Appleton Nature Club, Appleton Sr. HS, and GARY KAZIUKEWICZ, De Padua HS, Ashland.

Junior High School Meeting

This year our hosts for the statewide junior high meeting were Oshkosh High School and Wisconsin State College, Oshkosh. The committee in charge were M. R. HYMER, Oshkosh HS, Chairman, AMOS YONKE, Wausau Jr. HS, and C. EMIL DUWE, Steuben Jr. HS, Milwaukee. Over 100 people attended the meeting. First prize of a $50 bond was earned by TIM HULICK, St. Joseph's School, La Crosse. Second prize of a $25 bond was earned by SHARON NORIN of Steuben Jr. HS, Milwaukee. Third prize of $5 cash and an A rating for science magazine subscription choice was awarded to JUDY WILDFANG, College Jr. HS, Stevens Point. Outstanding ratings, giving a wide choice of science magazine subscriptions were earned by CHARLES BLAIR, Wausau Jr. HS, ABBEY HALLEY, RICHARD ROZELLE, and CLARENCE NETWAL, all of Campus School, La Crosse, and jointly by JERRY ZARET and JERRY

OPIKA of Steuben Jr. HS, Milwaukee. A choice of science magazine subscriptions was also given to JUANITA FLAIG and ELLEN TORK, College Jr. HS, Stevens Point, CARMEN DUFFY and RANDALL COWLEY, Campus School, La Crosse, ROGER HABECK, Waukesha HS, and ROSE KAMITZ, ROY KNISPEL and DAVE DONNER (jointly) and EVA GRITZMACHER and DONNA SCHMIDT (jointly), Merrill Jr. HS.

The wide distribution of prizes was made possible by the generosity of the following firms: AMPCO METAL, INC., Milwaukee, MARATHON CORPORATION, Menasha, , MURCO FOUNDATION, INC., Wausau, and the MARATHON BATTERY COMPANY, Wausau. Judges at the statewide junior high meeting were Dr. JAMES UNGER and Profs. DAVID MARBLE and ANTHONY WOMASKI of the Wisconsin State College, Oshkosh, faculty.

Wisconsin Science Talent Search Results

The committee of the Wisconsin Science Talent Search has named the following winners this year: Boys: ROBERT C. DIMICK, Appleton, WILLIAM M. DREIER, Racine, ROBERT F. FELLENZ, Marshfield, DAVID G. HALMSTAD, Chippewa Falls, RICHARD G. HAMLET, Wauwatosa, JOHN E. HARRIMAN, Appleton, JAMES P. HARTER, Auburndale, CHARLES W. McCLURE, Beloit, and THOMAS L. McFARLAND, Jr., Wauwatosa. Girls: SANDRA A. GEMMEL, Kenosha, KATHLEEN HABLE, Loyal, JANET E. KRATSCH, Oshkosh, and VIRGINIA R. POCHMANN, Madison.

The President of the Senior Academy will send letters on behalf of these people to the colleges of their choice, recommending them for scholarship consideration. Students who enter the Westinghouse National Science Talent Search are also automatically entered in the Wisconsin Science Talent Search, as after the National Search is ended the sponsors, Science Clubs of America, forward the papers from Wisconsin to the State Committee for judging.

The State Committee members are Professors ROY CHRISTOPH, Carroll College, Chairman, J. M. CASKEY, Northland College, MARIANNA CHERRY, Milwaukee-Downer College, STEPHEN DARLING, Lawrence College, L. A. FRASER, Univ. of Wisconsin, J. B. GREENE, Marquette Univ., ROBERT HENRY, Ripon College, and R. C. HUFFER, Beloit College.

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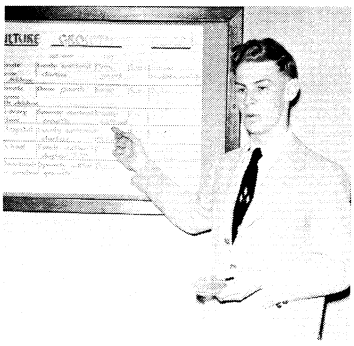
DETERMINING THE EFFECTS OF DISINFECTANTS ON VARIOUS TYPES OF BACTERIA

By Gary Kaziukewicz
De Padua High School, Ashland



Bacteria! To the average person this word means germs, disease, and as of late, a means of warfare. But to the scientist, it means microorganisms responsible for fermentation, putrefaction, life, and unfortunately, disease. I will present to you the results I obtained by the use of common household substances as disinfectants on these prevalent fungi.

This project developed from a

desire to isolate and work with penicillin mold. In attempting to secure literature on the subject, an interest in the isolation, identification, and the antibiotical effects of bacteria developed.

To develop the different procedures and techniques necessary for the isolation and identification of bacteria, I obtained some nutrient agar, which I mixed and put in several test tubes and covered with cotton stoppers. These, along with several petri dishes were sterilized in an autoclave at St. Joseph's Hospital near the School. I inoculated these with organisms from different doorknobs. After mixing the required substances necessary for the Gram's Stain, I got practice in making slices.

My cultures of bacteria were obtained from doorknobs from a school, grocery store, hospital, a private home with small children, one without children, and another exposed to the direct sunshine. The amount of growth and the types of organisms found in each petri dish was observed and charted every twenty-four hours for three successive days. The findings were as follows:

Very little growth in the size and number of colonies took place after the first twenty-four hours. All the cultures had a comparatively even but scattered growth of colonies; the culture from the doorknob in the direct sunlight having the least amount of growth. The types of organisms found included strepto and staphlo bacilli and cocci, diplococci, sarcina, and a white and green mold.

These fungi were stained by the use of Gram's Stain. It was interesting to note that the number of gram positive and gram negative organisms was about equal.

After the identification of the organisms by slides, I isolated a typical staphlobacillus and staphlococcus organism by the streakplate method and then used these pure cultures to inoculate several agar slants. The disinfectant properties of 5, 10, and 75 per cent alcohol, 5 per cent soap solution, 95 per cent isopropyl alcohol, a detergent, 10 per cent boric acid, 5 and 10 per cent sodium chloride, and vinegar were then tested on these inoculated slants. The only solution which prevented all growth in the cocci tubes were the isopropyl alcohol and vinegar; the others all showing a slight effect on the amount of growth.

On the slants inoculated with bacilli, the tubes with the 10 per cent alcohol and 10 per cent boric acid were slightly affected while the tubes with 75 per cent alcohol, isopropyl alcohol, and vinegar prevented all growth.

In the culture grown from a doorknob in the direct sunshine, a colony of streptococci was found that exhibited antibiotical effects in that it prevented all growth of other bacteria and mold, which were scattered evenly throughout the rest of the dish. It prevented growth of other fungi for about one-half inch around it.

At this time a mixed culture of bacteria and the fungus causing athlete's foot or dermatopytosis was obtained directly from a person infected with it. I isolated the mold causing athlete's foot by the streak-plate method. Then I tried the same substances stated previously on this organism. Alcohol seemed to have an invigorating rather than a disinfecting effect on it. The growth was more dense and a brighter green in color. In judging from the control, there seemed to be some slight effect in all of the test tubes, except the ones with isopropyl alcohol and vinegar, which prevented all growth.

My conclusions from my project may be put briefly as follows: 1. That cocci are more prevalent than bacilli. 2. That the same forms of bacteria have colonies of different shapes and pigments. 3. That some bacteria have antibiotical effects on other bacteria. 4. That boric acid, alcohol, soap, and detergents have a slight effect on bacteria in general. 5. That isopropyl alcohol has a much greater effect in preventing growth of bacteria than the previously mentioned substances. 6. That vinegar has excellent disinfectant properties.

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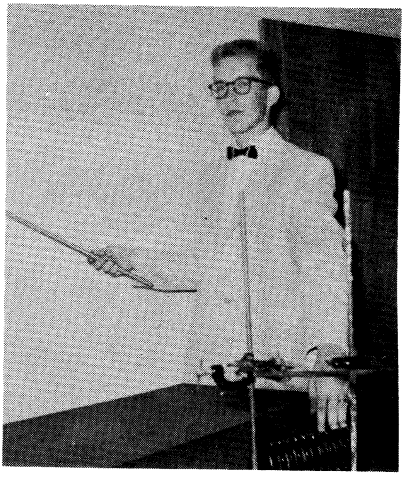
CONSTRUCTION OF A CONCAVE DIFFRACTION GRATING SPECTOGRAPH

By Merwyn H. Hemp
Lincoln High School, Wisconsin Rapids



In this project, I used Rowland's plan of having the slit, the grating, and the spectrum all lying on the circumference of a circle, the diameter of which is equal to the radium of curvature of the grating (in my case, 106 centimeters).

The relationship between the angle made by the line of light from the slit to the center of the grating and the grating normal (represented by θ_1), and the angle made by light reflected by the grating and the grating normal (represented by θ), is given by the formula:

$$\sin \theta = \frac{n}{b} - \sin \theta_1$$

In this formula, n represents the spectral order, λ represents any desired wavelength, and b represents the distance between lines on the grating. The grating has 15,000 lines per inch.

By letting angle θ_1 equal 11°, I finally obtained a nine inch first order spectrum, which was about what I wanted. I constructed the camera box (which is 4½ feet long, 17 inches wide, and 3½ inches high) out of 1/4 inch plywood, which comprises the top and the bottom, and the sides out of 1/2 inch pine. This entire assembly was painted dead black so as to reflect as little light as possible. I made the slit by gluing razor blades on pieces of balsa which slide over a hole in the front of the camera box. Because of this, the slit can be adjusted to any desired width. The grating is held at its proper angle by a piece of pine cut to fit it, and when turned, any order can be thrown on the film holder. The film holder to record the spectrum was constructed by laminating pieces of balsa to fit the circumference of the Rowland Circle. In my experiments, I am using Kodak Super Panchro-Press, Type B film.

For light sources in my experiments, I am using a Bunsen burner for the flame spectra, various Geissler tubes, and a carbon arc.

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State and Academy News

NEWS NOTES FROM RACINE EXTENSION CENTER

Submitted by Prof. John F. Vozza
Chemistry Department

In keeping with its policy of serving the people of the State of Wisconsin the University Extension Division through the Racine Extension Center recently presented a series of lectures and discussions on Recent Advances in Chemistry. The guest speakers were members of the staff of the Chemistry department of the University of Wisconsin.

Prof. J. W. WILLIAMS initiated the series with a discussion of the techniques employed in studying and separating complex colloidal systems such as blood plasma into their components, particularly in connection with the preparation of gamma globulin. His second lecture was devoted to the operation and use of the supercentrifuge which he personally developed to a great extent. He covered the theoretical and practical aspects of the techniques used in the determination of particle size with emphasis on materials that are being considered as blood extenders, showing the physiochemical properties that these products must possess in order to function satisfactorily in the blood stream.

Prof. N. F. HALL presented the next lecture, dealing with the importance of non-aqueous systems in analytical chemistry in particular. He emphasized recent theoretical and practical developments which have led to the increase in speed and accuracy in the determination of many substances.

The currently active field of radioactivity was covered by Prof. JOHN E. WILLARD. He reviewed the methods of producing and handling radio isotopes in addition to pointing out their numerous applications in industry, medicine, and research.

Prof. V. W. MELOCHE summarized the development of various instruments used in quantitative analysis, stressing the high degree of accuracy possible in many instances and their contributions to the rapid development of other fields of chemistry. The operation and use of the election microscope in the determination of particle size were discussed by Prof. P. J. KAESBERG (biochemistry). He illustrated its application to the study of viruses and polymers.

The series was concluded with a lecture by Prof. E. W. VAN TAMELEW who discussed the application of ultra violet and infra red spectrophotometry to the study of molecular structures of organic compounds.

NEWS NOTES FROM MARQUETTE UNIVERSITY

Collected by Prof. Scott L. Kittsley (Review Reporter)

The Science Teachers Day held in Science Hall, April 16, sponsored by Marquette and the Milwaukee Journal, was part of the Southeast Wisconsin Science Fair held over the same weekend. Father LAWRENCE W. FRIEDRICH, S.J., of the Physics department was chairman of the executive committee for the Fair and M. ARLINE ALBRIGHT of

the Education department was chairman of the consultation committee which planned the Teachers Day. Others from Marquette on this committee were Father Friedrich, Father JOSEPH F. CARROLL, S.J., director of the Physics department, JOHN R. KOCH, director of the Chemistry department and Father RAYMOND H. REIS, director of the Biology department. About 200 teachers attended the meetings and, according to Professor Albright, they heard speakers from the field of Science education and from related fields, discussed common problems and made suggestions for their solution. The theme of the day was "Careers in Science."

Prof. CYRIL C. O'BRIEN, Education department, recently presented a paper to the Midwest Psychological Association convention in Chicago. The paper was entitled, "Intensive Calcium Therapy as an Initial Approach to the Psychotherapeutic Relationship in the Rehabilitation of the Compulsive Drinker." Several members of the Psychology department also attended this meeting. Prof. O'Brien's work on calcium therapy in the treatment of alcoholism is the subject as well of two chapters he authored in a new book, "Management of Addictions," edited by EDWARD PODOLSKY, M.D., and published by the Philosophical Library in New York.

Prof. JOHN W. SAUNDERS of the Biology department has received a $2500 grant from the American Cancer Society for a year's study of the stimulation of embryonic nerve cell growth by cancerous tissue. According to Prof. Saunders, he will work on this research project here at Marquette and at the Mount Desert Island Biological Laboratory in Salisbury Cove, Maine. Miss MARY T. GASSELING will assist him.

Over 300 teachers in the Milwaukee area attended a Cooperating Teachers' Conference April 21, sponsored by the Education department under the leadership of Prof. M. ARLINE ALBRIGHT and Mrs. BERENICE M. CRAWFORD. Prof. JOHN P. TREACY, director of the Education dept. gave a welcome address and WILLIAM H. CONLEY, Educational Assistant to the President, spoke on "Present Dimensions in the Training of Teachers." Under the chairmanship of Prof. N.J. TOPETZES, the Education department also recently presented a panel discussion on such questions as: Are student failures teacher failures? What percentage of students should be failed? How do failure and retention affect the whole student? Should all students pass? What is gained by failing a student? What is the relation of failure to administration?

Some summer plans for the Marquette faculty include: Prof. JOHN PICK, English department, will represent Marquette at the 23rd World Congress of Pax Romana at the Univ. of Nottingham and London, August 17-25, and will present a paper on "The Cultural Development of the Young Graduate." Prof. JOHN G. SURAK, Chemistry dept., and FRANK G. KARIORIS, Physics dept., will be working at Oak Ridge National Laboratories in Tennessee. Prof. VICTOR M. HAMM, English dept., will be chairman of a conference on "Sound and Meaning in Poetry" at Columbia University's annual English Institute, Sept.10-13; Father RALPH S. MARCH, S.O.Cist., will take a group of students on a European tour; Prof. CYRIL E. SMITH, History dept., will take a nine-week trip to the far east, stopping for three weeks in Japan.

NEWS NOTE FROM MILWAUKEE PUBLIC MUSEUM, by W. C. McKern

MURL DEUSING, Curator of Education at the Milwaukee Public Museum, is making motion pictures in Africa as one of the official photographers on an expedition sponsored by the NBC-TV Zoo Parade program. He left Milwaukee on May 30 and expects to be in Africa

for a period of three months. His first assignment is in Tanganyika Province, British East Africa, where he will photograph the great seasonal migration of hoofed animals, probably the most extraordinary phenomenon of its kind in our generation. After that he will photograph other mammals. Mrs. Deusing is assisting him in this work.

HONORS AND AWARDS

A pioneer timber technologist, HARRY D. TIEMANN, 81, Madison, received one of 75 "Charter Member" certificates awarded this year to living members of the original U. S. Forest Service staff. The awards are part of the observance of the Golden Anniversary of the Forest Service.

A member of the Forest Products Laboratory staff from 1910 until he retired in 1945, Tiemann was responsible for some of the greatest technological advances ever made in the field of timber physics. He developed the first practical wood drying kiln used in this country. He also discovered the "fiber saturation point" of wood--that point in the drying process where shrinkage starts and the strength properties of wood begin to increase. After joining the federal Bureau of Forestry in 1900, Tiemann taught forestry for a time at Yale University before coming to Madison in 1910 to take charge of the timber physics section of the newly-formed Forest Products Laboratory. The entire science of timber physics is based to a large extent on the pioneering research of Harry Tiemann. His book, "Wood Technology," published in 1942, is regarded as the most comprehensive ever published in the English language.

Miscellaneous: ALBERT M. FULLER, Curator of Botany at the Milwaukee Public Museum, is the new Chairman of the State Board for Preservation of Scientific Areas. . . . A. W. SCHORGER'S recent book "The Passenger Pigeon--Its Natural History and Extinction" was cited in the New York Times of June 5 as one of the 100 outstanding books of the year, according to a selection made by their book review staff from approximately 5,000 titles. . . . CHARLES R. GELATT of La Crosse recently was elected Chairman of the Univ. of Wisconsin Board of Regents. . . . Prof. OLAF HAUGEN, Chairman of the UW Dept. of Chemical Engineering, was named to the recently-created Charles F. Burgess professorship. . . . The UW Board of Regents recently voted emeritus status to Professors HENRY A. SCHUETTE and A. W. SCHORGER. . . . FRANK LLOYD WRIGHT, an honorary member of the Wisconsin Academy, was awarded the honorary degree, Doctor of Fine Arts, by the UW at Commencement exercises June 17.

MILO K. SWANTON of Madison was recently elected the new president of the State Historical Society, W. C. McKERN, Director of the Milwaukee Public Museum, was selected first vice-president, and Mrs. B. C. ZIEGLER of West Bend, second vice-president. . . . Dr. ARNOLD S. JACKSON (Jackson Clinic, Madison) is president of the American chapter of the International College of Surgeons. . . . The new chairman of the State Forestry Advisory Committee to the Wisconsin Conservation Commission is F. G. KILP of the Nekoosa-Edwards Paper Co., Port Edwards. Two other members of the committee are D. C. EVEREST and ALLAN S. HAUKOM. . . . Among members of the Conservation Commission's joint Research Steering and Advisory committees are WILLIAM H. BRENER, JOHN T. CURTIS, ROBERT A. McCABE, FRED B. TRENK, and EDWIN L. COOPER, executive secretary of the group. . . . Dr. COOPER is also chairman of the Fish Technical committee of the Upper Mississippi River Conservation Committee, and EDWARD SCHNEBERGER heads their Publications committee.

MISCELLANEOUS NEWS

A recent government publication, "Statistics on Libraries in Institutions of Higher Education 1951-52" lists the number of volumes at the end of the year for schools with enrollments of over 5,000 students and shows 863,980 books for the University of Wisconsin at Madison and 190,061 for Marquette University at Milwaukee. . . . NORMAN BASSETT of Madison recently presented to the Univ. of Wisconsin his Mark Twain collection of first editions, manuscripts and letters valued at well over $10,000. . . . Emeritus Professor HENRY A. SCHUETTE has been given a special service contract to conduct research for the UW Dept. of Chemistry. . . . Prof. ROBERT E. GARD, Director of the UW Extension Division's Wisconsin Idea Theater, will have his novel about western Canada entitled "Midnight" published in late fall or early winter. . . . The estate of a past president of the Wisconsin Academy, JOHN JEFFERSON DAVIS, who was Curator of the UW Herbarium from 1911-37, has finally become available for botanical research in the amount of approximately $2,500 annually. Davis died in 1937 and left his estate in trust. . . . ALVIN THRONE is traveling in Alaska this summer. . . . Professors C. M. HUFFER and A. E. WHITFORD of the UW Astronomy Dept. will attend a meeting of the International Astronomical Union in Dublin, Ireland this fall. . . . The Chicago and Northwestern Railway recently paid $9,000 for damages caused by a fire in the University Arboretum on March 8, 1954.

The May-June 1955 issue of the Wisconsin Library Bulletin carried an extensive listing on "Special Libraries in Wisconsin." According to this report the Milwaukee chapter of the Special Libraries Association has 85 members representing 45 individual libraries which extend beyond the Milwaukee area, so that a change in name to "Wisconsin Chapter" is contemplated. . . . Total enrollment on the UW Madison campus is expected to be about 14,600 next fall, which is an increase of approximately 700 over the preceding year. With about 2,500 students enrolled at nine UW Extension Centers throughout the state, the total enrollment on all campuses next fall would reach about 17,000. . . . According to Technical Notes (No. 436) from the Lake States Forest Experiment Station at St. Paul, Wisconsin's 1954 pulpwood harvest of 691,000 cords was the largest annual cut of pulpwood ever to be recorded in the state. . . . The UW Extension Division's program of correspondence courses is said to be the largest in the world, with 6,357 persons from throughout the world enrolled during the 1954-55 year.

The Univ. of Wisconsin Board of Regents have been accepting in recent months contributions for a HARRY L. RUSSELL Memorial Fund to be used in aiding students interested in wildlife management. . . . For the third consecutive year the Univ. of Wisconsin has been rated as America's sixth largest university in full-time enrollment of students. . . . Prof. H. C. GREENE of the UW Botany Dept. is editor of their Arboretum News which is now in its fourth volume. . . . A chair of Hebrew studies has been financed at the Univ. of Wisconsin for a period of five years as the result of a gift from the American Jewish Tercentenary Committee of Wisconsin and the Milwaukee Chapter of the American Jewish committee to celebrate this event and encourage the teaching of Hebrew language and literature. . . . The State Broadcasting Service will feature a 10-minute "Science Spotlight" at 2:30 p.m. each Friday with the focus on current scientific news and events, presented by Miss MARJORY MILLER with the assistance of writer JACK SPEILLER. . . . Prof. P. C. HAMMER is chairman of arrangements for a UW conference on the Electronic Computer and the Numerical Analysis Laboratory (Aug.17-19). The proceedings of the conference will be published by the Univ. of Wisconsin Press.

# # #

PROBING OUR PAST
By Merle Curti

Harper and Brothers
49 East 33rd street
New York, 16, N. Y.
1955 - $4.00

(Review by ALFRED F. PAHLKE reprinted with permission from Milwaukee Journal of February 13, 1955)

MERLE CURTI, Wisconsin's Pulitzer prize winning historian, hopes that this collection of his essays, written over the last 30 years, will interest not only the scholar, but the public. The volume, a modest one, certainly should interest "the general reader who finds pleasure in exploring the less familiar, but not necessarily the less important, chapters of our national history."

As an historian of American thought, the author deals less with politics than with the ideas that have influenced politics and economics. The sources of some of these ideas are less than familiar to many Americans. For instance, when the author traces the liberal, rationalistic thinking in antebellum America to John Locke, the English philosopher, he may give a slight surprise to general readers. As often happens in the case of philosophers, Locke's views seeped down to Americans chiefly at second and third hand through popular writers, and many who acquired Locke's way of looking at things may never even have heard his name.

Again, we are reminded of the half forgotten Francis Lieber, the German immigrant who, oddly, became the most eloquent preacher of American nationalism when the Civil war threatened to wipe out national feeling. Lieber was one of the few Germans who credited the Anglo-Saxon race (he chose to call it the "Anglican" race)with "a peculiar gift that distinguished it from every other Teutonic people." Civil liberty, he said, "made up its very bones and marrow," and Americans had even improved on the British in the essential "race qualities" of individual freedom and local self-government. When the trustees of Columbia university tried to oust him, Lieber wondered as to the reason. Could it be that he was too "confoundedly national?"

Our contacts with Europe, both friendly and hostile, in the last century are well remembered, but it is profitable to recall early outbursts of the crusading spirit in behalf of the spread of democracy. The "Young America" of 1852 felt that it had a mission to democratize Europe by giving aid to European revolutionaries like Kossuth. As a result, the old world governments began to look upon Americans as interlopers and trouble makers.

The essay on "The Reputation of America Overseas" provides

timely reading in view of our present commitments abroad. And a review of the peaceful conquests of American industry, as it was represented at world fairs from 1851 to 1893, throws light on the problem of foreign competition. The record also shows that American products were not always superior.

There is entertainment and instruction in the chapter on "Dime Novels and the American Tradition." It is the exploration of such bypaths that makes the book lively reading and that has won for its author, professor of history at the University of Wisconsin, the honor of election to the presidency of the American Historical Association.

# # #

HAWTHORNS OF WISCONSIN
By Emil P. Kruschke

Milwaukee Public Museum
818 W. Wisconsin avenue
Milwaukee 3, Wisconsin
1955 - $2.50

EMIL P. KRUSCHKE, Associate Curator of Botany at the Milwaukee Public Museum, has published this first part of his extensive study of the Hawthorns (Crataegus) of Wisconsin in a 124-page book which is the Milwaukee Public Museum's "Publications in Botany, No. 2." The plan is to issue the results of his study in two parts and this Part I covers "the status, objectives, and methods of collecting and preparing specimens." The second part will cover "the classification and distribution of Hawthorns in Wisconsin."

With the aid of 57 figures, Kruschke explains his methods of collecting and preparing specimens. He also discusses the status of these plants in the state and a thorough bibliography is included. A number of the illustrations are ecological photographs and others are diagrams of botanical driers, presses and other equipment necessary in this study.

Kruschke has been collecting hawthorns in Wisconsin for the past 15 years and his Part II publication on the subject of classification and distribution will be based on extensive field work and many specimens. He recently spent five weeks in the Eastern U. S. checking type specimens at other museums and discussing this problem with leading taxonomists in the country. It is reported he is well on the way toward completion of this final part of his study. ---Walter E. Scott

# # #

GRASSROOTS THEATER
By Robert Gard

The Univ. of Wisconsin Press
811 State street
Madison 5, Wisconsin
May, 1955 $4.00

For 10 years now, through dozens of rural and community projects, Prof. ROBERT GARD, director of the Wisconsin Idea Theater, and his staff have been helping Wisconsin people to know the deep creative pleasures in singing, painting, staging plays, and writing. "Grassroots Theater" tells about Wisconsin people and places and the University's hand reaching out to lead Badgers everywhere into more easy, intimate terms with the arts. He tells also of the prelude to this Wisconsin experience--extension of the state's long tradition of democracy in education. "The sproutings of artistic expression, the coming to life in a thousand places, the places where people strive honestly for the spark of an art impulse are my satisfactions and the results of my search," Prof. Gard reports.

# # #

SOLAR ENERGY RESEARCH
Edited by Farrington Daniels and John A. Duffie

The Univ. of Wisconsin Press
811 State street
Madison 5, Wisconsin
July, 1955 $4.00

Dr. FARRINGTON DANIELS writes in the introduction to "Solar Energy Research": "If I had been asked in 1938 which would come first--atomic or solar energy--I would have answered 'solar energy.'" The book is one result of a symposium sponsored in 1953 by the National Science Foundation and organized by Prof. Daniels. It drew some 30 of the world's best solar energy experts to Wisconsin to exchange ideas and glimpses of solar energy's future possibilities. Each expert contributed a chapter to "Solar Energy Research." The book is considered the authoritative work in its field. In addition to the introduction, Daniels contributes chapter notes and several reports on his own work. JOHN A. DUFFIE, who assisted in the editing, has written a chapter outlining the patents relating to solar energy now on file in the U. S. Patent Office.

The book is divided into sections, with three or four chapters in each, devoted to discussions of expected world energy demands, nature and availability of solar power, space heating and domestic uses of solar energy, solar power plants, solar evaporation and distillation, conversion of solar to electrical energy, solar furnaces, photosynthetic utilization, British applications, and suggestions for further research.

# # #

CITIES OF WISCONSIN AND UPPER MICHIGAN
Published by The Milwaukee Sentinel

The Milwaukee Sentinel
Milwaukee, Wisconsin
1955 $1.50
Cardboard cover

Written by MAX T. NELSON, executive news editor, and DENNIS L. THISTED, state editor of the Sentinel, the articles reproduced in the book give a comprehensive account of cities in the area, past and present. Reprinted in large magazine format, by offset process, the series of 55 illustrated articles which appeared in the Sunday Milwaukee Sentinel, contains 110,000 words and 548 illustrations. All aspects of the community's life are presented, and statistics on population, employment, debt limitations and the like make the book a valuable reference source.

# # #

BADGER CHEMIST
Henry A. Schuette, Editor

Two Academy members of the Department of Chemistry at the UW have been publishing the Badger Chemist in a single issue each summer since 1953. HENRY A. SCHUETTE is Editor and AARON J. IHDE is assistant editor. The publication is essentially a newsletter of special interest to graduates and members of the UW Chemistry Department and the 1954 issue contained 12 pages. It is financed through contributions of the faculty and alumni and would be valuable to anyone interested in following their work in this active and important field. Editor's address: c/o UW Chemistry Building, Madison 6. # # #

SOIL SCIENCE AND THE ART OF TIMBER GROWING, by S. A. WILDE
Under the above title Prof. S. A. WILDE is issuing in process printed form selected lectures from his course in Soils 124 at the Univ. of Wisconsin. Titles which Academy members may secure free by writing him c/o College of Agriculture, Madison 6, are: Historical and Introductory--Rise of Knowledge Relative to Forest Soils; Soils and Vegetation of the Great Lakes Region of America; From Rocks to Soils to Forest Cover; Forest Soil Survey. # # #

In Memoriam

Ruth Marshall

1869-1955

Editor's Note: RUTH MARSHALL was a member of the Academy for over 60 years and was an exceptional woman in many other ways. The Academy has lost a faithful and talented member.

RUTH MARSHALL was born December 24, 1869, near the village of Big Spring, Adams County, Wisconsin, the daughter of George M. and Julia Hoyt Marshall. A few years later the family moved to Kilbourn (now Wisconsin Dells), where she attended the public schools. For two years she taught in rural schools of Adams and Juneau Counties. She entered the University of Wisconsin and graduated (honors) in 1892. Later, as an alumna, she was elected to Phi Beta Kappa.

She taught in the high schools of Baraboo, Madison, and Appleton, with a year at Grafton Hall, Fond du Lac. One summer was spent at the marine biological station, Woods Hole, Mass., and another summer course was taken at Clark University, Worcester, Mass.

An early interest in research, encouraged and guided by Dr. E. A. Birge, led to a master's degree in Zoology from the Univ. of Wisconsin in 1900; her thesis, published soon after, was her first paper on the hydracarina (water mites). Some thirty more followed in later years. She entered the graduate school of the University of Nebraska, on a fellowship, and received the Ph.D. in Zoology in 1907, and elected to Sigma Xi. A year as instructor at the Univ. of Nebraska was followed by short periods of teaching at two of the state teachers' colleges of Illinois, the Normal and one year at DeKalb. Her longest period of teaching was at Rockford College; this was in two parts, interrupted by four years at the Lane Technical School of Chicago, and some substitute teaching in the same city. She retired from Rockford College in 1935, after a total of twenty years as head of the Department of Biology, with the title of professor emeritus and an honorary degree.

Summer vacations and sometimes longer periods were spent in collecting material for research, chiefly in Wisconsin (seven summers at Lake Spooner) but also in Canada, Alaska, and Cuba, with a summer each at Lake Okoboji (Iowa State Station), Douglas

Lake, Michigan; Illinois River near Havana, and Trout Lake, Wisconsin. Many of these trips were camping trips. In and near the Dells of the Wisconsin she spent several summers; she published a booklet on the ferns of this region in collaboration with her sister, Mrs. H. H. Bennett. Her water mite collections and data are deposited in the Chicago Natural History Museum; the collection includes those of Dr. R. W. WOLCOTT, Univ. of Nebraska.

She was fond of travel and visited many parts of the United States as well as Panama and Mexico and Cuba. One summer, 1929, was spent in Europe where she visited several workers in her field of research.

She was a member of several national scientific societies, as the American Association for the Advancement of Science (a fellow), the American Society of Zoologists, the Limnological Society, American Microscopical Society, and a life member of the Illinois State Academy of Science and the Wisconsin Academy of Sciences, Arts and Letters; also the Sigma Delta Epsilon, women's honorary scientific society. She was also a member of the American Association of University Women and the League of Women Voters.

After her retirement from Rockford College she made her home at Wisconsin Dells, where she continued her research work for several years. On January 25, 1955 she fell and broke her hip. This accident and resulting complications resulted in her death on May 12. She is survived by two nieces, Miss Miriam Bennett and Mrs. Roland Dyer.

# # #

10th Annual Meeting

September 12 - 14, 1955

S • C • S • A

Soil Conservation Society of America

The Soil Conservation Society of America has selected the American Baptist Assembly at Green Lake for their national meeting, September 12-14. Academy members will play an important part in this program, with Gov. WALTER J. KOHLER extending the greetings on the opening day, I. O. HEMBRE, president of the Wisconsin chapter, giving the address of welcome, and H. DEAN COCHRANE, regional forester for the U. S. Forest Service (Milwaukee) appearing on a panel entitled "Problems in Managing Non-Agricultural Areas in the Lake States."

Other Wisconsin men on the panel include HASKELL NOYES, Jr., Milwaukee conservationist, and N. S. STONE, vice-president of the Mosinee Paper Mills Co. WALTER A. ROWLANDS of the UW college of Agriculture, will also speak on "Putting Land to a Safe and Sustained Use Through Zoning." Other technical sessions will feature papers by national authorities on soil and water management, land use, and related subjects such as a report on "Industry's Stake in Land and Water Conservation" by WILLIS H. SCHOLL, vice-president of the Allis Chalmers Corporation.

# # #

ACKNOWLEDGMENTS: The sketches on pages 13 and 15 are from "Canoe Country" by FLORENCE PAGE JAQUES with illustrations by FRANCIS LEE JAQUES, published by the University of Minnesota Press, copyrighted 1938; they are reproduced here through the kind permission of both the artist and the publisher. The sketch on page 19 is from "Sky Laboratories," Cornell Rural School Leaflet, Vol. 46, No. 3.

# # #

TREASURER'S REPORT

(April 1, 1955)

RECEIPTS

Carried forward from Treasury April 1, 1954:			
Checking account		$ 2,048.50	
Savings account No. 3262		850.41	$ 2,898.91
Receipts from membership:			
Dues from Sustaining, Active, Library . .		1,456.50	
Patron (Bostrom Foundation, Inc.)		75.00	
Life: W. D. Schorger $100			
G. R. Rahr 100		200.00	
Contributions to general fund:			
E. B. Fred $ 7 A. J. Schlaeger $ 1			
C. M. Goethe 25 D. J. Stewart 20			
W. J. Kohler 7 F. Zirrer 2		62.00	
Junior Academy of Science:			
Club dues	14.00		
Sale of pins	14.30		
Refund on magazine sub.	3.00	31.30	
Contributions to prizes:			
Ampco Metal, Inc.	15.00		
Consolidated Civic Founda.	20.00		
Nepco Foundation	20.00		
A. W. Schorger	25.00		
Wis. Valley Trust Co.	20.00	100.00	1,924.80
Receipts from interest on endowment and savings			127.75
Receipts for publication of TRANSACTIONS:			
State of Wisconsin, Appro. No. 20.161, biennium 1954-55			3,000.00
Receipts from sale of publications:			
Sale of TRANSACTIONS and separates		223.54	
Sale of offprints and reprints		576.01	799.55
Grant-in-Aid from A. A. A. S.			165.50
			$ 8,916.51

DISBURSEMENTS

Cost of publications:				
TRANSACTIONS:				
Printing and binding 1600 copies				
Vol. 43		$3,365.00		
Reprints (special orders) . . .		381.00	$ 3,746.00	
Wisconsin Academy Review:				
Vol. 1, No. 2 (700 copies)				
Printing and binding	$ 221.15			
Typing	25.00			
Postage and envelopes	13.81	259.96		
Vol. 1, No. 3 (700 copies)				
Printing and binding	217.40			
Typing	25.00			
Postage and envelopes	16.33			
Misc.	4.00	262.73		
Vol. 1, No. 4 (800 copies)				
Printing and binding	240.20			
Typing	25.00			
Postage and envelopes	22.64	287.84		
Vol. 2, No. 1 (800 copies)				
Printing and binding	259.80			
Typing	25.00			
Postage and envelopes	28.70	313.50	1,124.03	$ 4,870.03

DISBURSEMENTS - continued

Expenses of annual meeting:			
Printing programs		78.00	
Jr. Academy luncheon		20.00	
General (tips, complimentary tickets, decorations, etc.)		30.20	$ 128.20
Awards:			
Junior Academy prizes (magazine sub.)		116.50	
A.A.A.S. Grant-in-Aid			
W. L. Culberson	$82.75		
W. L. Wittry	82.75	165.50	282.00
Operating expenses:			
Secretarial allowance to R. J. Dicke. . .		300.00	
General postage		49.03	
Stationery, brochures, and supplies . . .		146.80	
Safety deposit box rental		4.40	
Telephone		2.50	502.73
Proceeds from Life Memberships to be transferred for investment in endowment fund.			300.00
Total Disbursements			$ 6,082.96
Balance on hand, April 1, 1955: Checking		$ 2,053.47	
Savings		750.41	
Cash		29.67	2,833.55
			$ 8,916.51

ENDOWMENTS AND ASSETS

1.	U. S. Treasury Coupon Bond 1692B	$ 1000
2.	U. S. Savings Bond Registered Series G-M1696059G . .	1000
3.	U. S. " " " " G-C1563347G . .	100
4.	U. S. " " " " G-C1563348G . .	100
5.	U. S. " " Series F-D494206F	500*
6.	U. S. " " " F-M989457F	1000*
7.	U. S. " " " G-C3389339G	100*
8.	U. S. " " " G-C3457898G	100*
9.	U. S. " " " G-C3512841G	100*
10.	U. S. " " " G-C3560656G	100*
11.	U. S. " " " G-C3564110G	100*
12.	U. S. " " " G-C4154481G	100*
13.	U. S. " " " G-C5044011G	100*
14.	U. S. " " " G-C5044012G	100*
15.	U. S. " " " G-C5074307G	100*
16.	U. S. " " " G-C5074308G	100*
17.	U. S. " " " G-C5463975G	100*
18.	25 Shares Mass. Investors Trust ($31.76 per share). .	794**
19.	Cash (uninvested proceeds of Life Membership). . . .	300
	Total Amount of Endowment	$ 5894
20.	U. S. Savings Bond Series G-C2386504G	100*
21.	U. S. " " " G-C2386505G	100*
22.	U. S. " " " G-C2386506G	100*
23.	U. S. " " " G-C2386507G	100*
	Current Assets Invested in U. S. Bonds	$ 400
	GRAND TOTAL	$ 6294

* Value of bond at maturity
** Current value (May 1, 1955)

/s/ Robert J. Dicke
Robert J. Dicke
Secretary-Treasurer

The Auditing Committee has examined the accounts of the Treasurer and has found them in order. The contents of the safe deposit box and the savings accounts were found in order as reported above for the date April 1, 1955.

Auditing Committee:

/s/ A. W. Schorger
A. W. Schorger, Chm.

/s/ William E. Sieker
W. E. Sieker

Wisconsin Academy of Sciences, Arts and Letters
and the
Wisconsin Junior Academy of Science
Program
of the
Joint Meeting
Friday, May 6, 1955

ACADEMY SECTION

Philip and Kathryn Whitford, University of Wisconsin, Milwaukee Extension Division. *An ecological reconstruction of the land purchased in Illinois by William Ellery Channing* (15 min.)

Karl O. Werwath, Milwaukee School of Engineering. *The function and future of the technical institute.* (20 min.)

Ludwig K. Pauly, University Wisconsin, Milwaukee Extension Division. *The use of the precipitin reaction in the study of the taxonomy of the Carnivora* (20 min.)

Don Schlafke, Institute of Paper Chemistry. *Ultrasonics in industry* (15 min.)

James C. Perry, Marquette University. *Studies on estrogen induced sterility in white rats* (15 min.)

D. J. McCorquodale and R. E. Duncan, University Wisconsin. *Inhibitions produced by imidazole containing compounds and their reversals* (10 min.)

Clifton B. Kroeber, University Wisconsin. *The Argentine Navy from the Wars of Independence to the Age of Steam* (20 min.)

Robert H. Irrmann, Beloit College. *A trip to Mackinac and the Keweenaw*: 1849 (20 min.)

Edward C. Fuller, Beloit College. *Nineteenth century science and twentieth century materialism* (20 min.)

Robert S. Ellarson, University Wisconsin. *Annual mortality of diving birds in gill nets on Lake Michigan* (20 min.)

Douglass H. Pimlott, University Wisconsin. *The status of caribou in Newfoundland* (20 min.)

Robert A. McCabe, University Wisconsin. *Engineer farmers of Chihuahua* (20 min.)

Cyril C. O'Brien, Marquette University. *Variable factors in accident proneness in aviation, in industry, and in the home* (20 min.)

Preston C. Hammer, University Wisconsin. *Planar convex bodies of equivalent breadth* (20 min.)

Saturday, May 7, 1955

ACADEMY SECTION

David C. Sheldon, University Wisconsin, Milwaukee Extension Center. *Sir Henry Savile*, 1549-1622 - - *A Renaissance man of learning* (20 min.) INVITATION PAPER.

Robert E. Diamond, University Wisconsin. *Cynewulf's runic signatures* (15 min.)

Haskell M. Block, University Wisconsin. *Furor Poeticus and modern poetry* (15 min.)

Robert F. Gleckner, University Wisconsin. *Henry King: A poet of his age* (20 min.)

John P. O'Brien, E. J. Frank and J. L. Garner, Marquette University. *Temperature during exposure as a radiosensitivity-modifying factor* (20 min.)

R. J. Vogl and S. J. Peloquin, Marquette University. *Changes in the tapetum during anther development in Lilium longiflorum* (15 min.)

M. Imeldis and S. J. Peloquin, Marquette University. *Growth and cytological correlations in the ovary of Lilium longiflorum* (15 min.)

Donald A. Dever, University Wisconsin. *Biology and ecology of the cherry fruit worm in Wisconsin* (15 min.)

Berenice Cooper, Wisconsin State College, Superior. *The protestantism of the Abbe Prevost: Some skeptical comments on a paper by Claire-Elaine Engel* (Read by title only)

JUNIOR ACADEMY SECTION

Frank Dunn, Campion High School, Prairie du Chien. *Visible Electrons.*

Gary Kaziukewicz, De Padua High School, Ashland. *To determine the Effects of Disinfectants on Various Types of Bacteria.*

Gene Uehling, Aquinas High School, LaCrosse. *Construction and Design of Transistor Circuits.*

Charles Hutchins, Neenah High School, Neenah. *A Cloud Chamber.*

Ned Cochrane, Neenah High School, Neenah. *Can Fish See Colors.*

John Harriman, Appleton High School, Appleton. *Analysis of Chemical Reactions with an Infrared Spectrometer.*

Don Boelter, Lincoln High School, Wisconsin Rapids. *A Portable 2-meter Radio-telephone.*

Merwyn Hemp, Lincoln High School, Wisconsin Rapids. *A Concave Diffraction Grating Spectrograph.*

Kathleen Hable, Columbus High School, Marshfield. *Studies in Heredity.*

Robert Hartwig, Messmer High School, Milwaukee. *Digestion of Sawdust.*

Neil Kestner, Boys' Technical High School, Milwaukee. *Electrolysis of Solutions.*

Tom Werner, Mary D. Bradford High School, Kenosha. *Arteriosclerosis in Rabbits and Mice.*

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SECTION OF MOUND
at a.
as seen from c.

Mound Street

South Street

Aztec Street

Excavations

Steep Bank 40 ft high

WEST BRANCH OF ROCK RIVER

Embankment

ANCIENT WORKS
AT
AZTALAN.

Surveyed in 1850 by I. A. Lapham.

SCALE

I. A. Lapham Del.

T. Sinclair's lith. Phila.