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Wisconsin Academy review. Volume 5, Number 1 Winter 1958

Madison, Wisconsin: Wisconsin Academy of Sciences, Arts and Letters, Winter 1958

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WISCONSIN ACADEMY REVIEW

Winter, 1958

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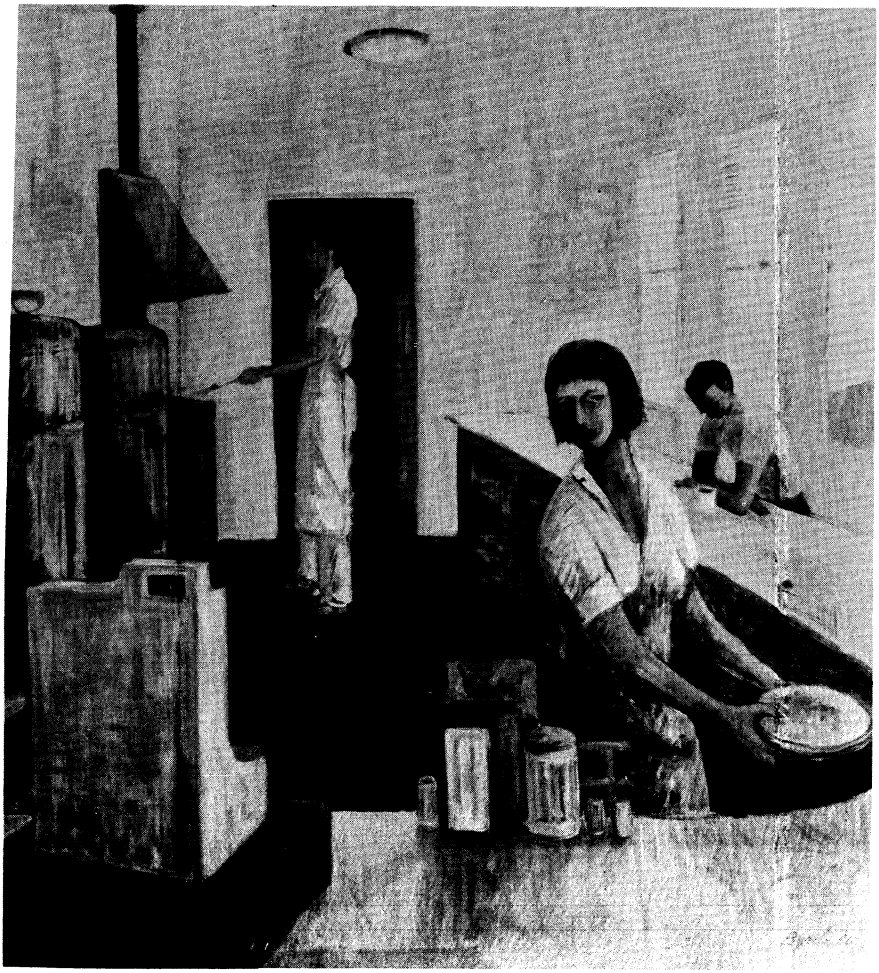

PUBLISHED QUARTERLY BY THE

WISCONSIN ACADEMY OF SCIENCES, ARTS AND LETTERS

WISCONSIN ACADEMY REVIEW
Vol. 5 Winter, 1958 No. 1

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WISCONSIN ACADEMY REVIEW

Published quarterly in January, April, July and October by the Wisconsin Academy of Sciences, Arts and Letters. Active membership fee or library subscription of $3.00 per year includes subscription to both Wisconsin Academy Review and the annual TRANSACTIONS. Address all correspondence concerning Academy business to Francis D. Hole, Sec'y-Treas., 203 Soils Bldg., Univ. of Wisconsin, Madison 6. Correspondence concerning the publication should be sent to the Editor concerned. Single copies 25¢ each.

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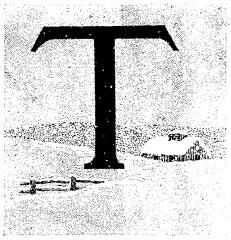
WISCONSIN'S AVERAGE WINTER SNOWFALL*

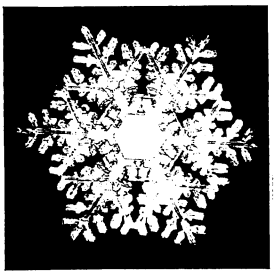
By Paul J. Waite, State Climatologist
U. S. Weather Bureau, U. W. Campus



The Wisconsin seasonal snowfall ranges from an average of 30 inches at Beloit to well over 100 inches in northern Iron county on the western slope of the Gogebic Range. This fact is based on a survey of records from 1931 through 1955. The mean dates of the first snowfall of an inch or more range from about December first in the southern Wisconsin counties to early November in the northern localities and with snowcover thereafter of about 85 days in the southern counties to more than 140 days along Lake Superior.

These variations of snowfall and snowcover are explained in a large part by the latitudinal temperature decrease northward, prevailing winds, topographic variations, proximity of large lakes and the mean winter storm tracks. In particular, the locally heavy snowfalls in the north central Wisconsin border areas can be attributed to the combined effects of the frequent northerly winds moving across the relatively warm Lake Superior before rising over the Northern Highlands where large amounts of snow are released on the windward slopes. Storms that originate in the southwestern plains states account for the heaviest statewide snows as they move over the state.

The seasonal snowfall representing 10 to 35 percent of the annual precipitation is of great importance to Wisconsin agriculture, commerce, transportation, recreation and other industries. The rate of snowfall and attendant conditions of cold and wind are important to all outside activity; the resulting snowcover greatly modifies the ensuing climate above and below the surface. The snowcover is an insulating blanket to grasses, autumn seeded grains and other wintering vegetation. It also limits the depth of frost penetration into the soil and at the same time effectively reflects most of the incoming solar radiation back into space to little modify the



* - See Map of Average Winter Snowfall on back cover.

frequent incursions of cold arctic air. A climatic control to induce early snowmelt consists of using a dark dye or soot on the snow to retain the incoming radiation. Conversely, snowcover may be retained in selected areas by inducing drifting with snowfences or vegetation plantings in the same fashion. Agricultural adaptations of practical nature involve differing spring plantings after a year of heavy snowfall and consequent ample spring and early summer soil moisture as contrasted to a dry early growing season likely after a limited snowcover.

INFORMATION PLEASE!

A suggested service for members seeking information from a generalized field to further their own specialized studies

Among the hundreds of readers of the Review are many who have data of vital interest which could be shared with others making intensive studies along a particular line. A request in a "classified" column such as this may result in securing scattered items valuable to a survey. An audience of readers whose interests are diversified may yield unexpected assistance. Try it! Send your request to the Editor.

Prof. REID BRYSON, in his suggestion, says, "I am searching for ice thickness, freeze-up, and thaw data for Wisconsin lakes and am sure many members, unknown to me, have such data." He may be addressed at 208 Science Bldg. U. W., Madison 6, Wisconsin.

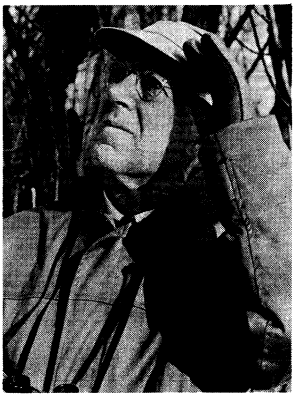
Dr. CHARLES DRECHSLER requested that his special subjects of study be listed quite completely in the Directory adding that "perhaps some members of the Academy living in Wisconsin might supply me with relevant materials." He is located at the Horticultural Crops Research Branch, Plant Industry Station, Beltsville, Md., and wishes data on: Oomycetes causing root rots of phanerogamic crop plants; Fungi parasitic or predacious on soil animalcula such as nematodes, amoebae, shelled rhizopods, tardigrades and springtails; Readily culturable members of the Entomophthorales, including Conidiobolus and Basidiobolus.

MUTINY ON THE BOUNTY

By A. W. Schorger, Emeritus Professor
U. W. Dept. of Forestry and Wildlife Management

The reader will recognize that I have purloined the title of a book and twisted it to mean the bounty on predators.

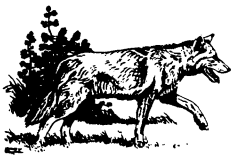
There are many definitions for a predator. Under present conditions the best one is that of T. Gilbert Pearson who said that a predator is an animal that kills something that you yourself wish to kill.



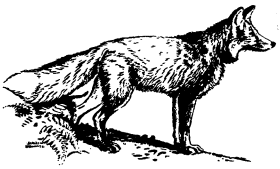
Bounties or laws requiring the killing of predators go back to dim antiquity. Any custom having a long and continued existence instills the belief that it must, accordingly, be a good thing. However, the history of the bounty shows that it is enormously expensive and futile in attaining the objectives desired.

Recently I had occasion to refer to a book (Sumario de la Natural Historia de las Indias) by G. F. de Oviedo, the first edition of which appeared in 1526, only a few years after the discovery of America. De Oviedo states that in 1523, he and the other city fathers of Darien offered a reward of four or five gold pesos for the killing of a "Tigre" (jaguar). This I believe is the earliest example of the bounty in the Americas.

It was essential during pioneer days to kill animals destructive to crops and livestock. The early Massachusetts colonies suffered so great loss of sheep and other domestic animals that ordinances were passed requiring the towns to take wolves in pits or by steel traps. In 1630 in Massachusetts, any Englishman who killed a wolf was entitled to receive a penny for every cow, horse, weaned swine, and goat on the plantations. Virginia in 1632 placed a bounty on wolves and continued it for over 300 years. In 1663 the inhabitants of Jamaica, New York gave seven bushels of corn for every wolf killed and shown to the town, or its head nailed to a tree.



Soon after a bounty was placed on wolves, other animals were included, for example, foxes, woodchucks, squirrels,



brown rats, blackbirds, and even the English sparrow. The province of Pennsylvania passed a law to pay three pence (six cents) per head for gray and black squirrels. After paying out 8,000 pounds ($18,400 in Pennsylvania currency) in the year 1749, the bounty was cut in half. The drain on the treasury was still so great that the bounty was eventually discontinued. The best that can be said for the bounty on English sparrows is that it provided the small boy with pocket money.

There is the classic experiment conducted by the state of New York on Valcour island in Lake Champlain. During a period of five years, effort was made to remove all predators. This resulted in the destruction of 1,250 hawks, owls, foxes, mink, weasels, and red squirrels. At the end of three years, due apparently to disease, there was a severe decline in the population of varying hares and ruffed grouse, showing that predators were not an important factor in game abundance.

Both New York and Michigan have conducted extensive experiments on the effect of foxes on pheasants. Areas on which foxes were trapped to a minimum did not show any improvement in the pheasant population over comparable areas where no trapping was done.

Minnesota has paid out over $1,000,000 in bounties on coyotes and seems thereby to have maintained a uniformly good coyote population. Recently the stockmen of Colorado have seen the light and are now protecting the coyote. Without the coyote to control rodents, damage to the pastures was excessive.

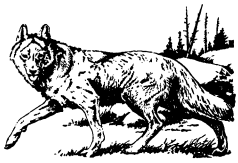
Individual predators may become so destructive to domestic animals that their removal becomes necessary. Missouri, after trying federal and state trappers at high cost for each animal caught, solved the problem by teaching farmers to do their own trapping. Two state men were detailed to give all-day demonstrations of the art of trapping to groups of farmers. Based on a value of $8 per day for the farmer's time, the average cost of removal of a predator was reduced to $7.

During the 10-year period, 1945-46 to 1954-55, Wisconsin has paid $1,244,438 in bounties. If we take into consideration a nearly equal amount paid by the counties, and clerical expenses, the total cost of the bounties was at least $2,500,000. This is no small sum to expend without appreciable benefit, particularly when

it is becoming increasingly difficult to find money for necessary governmental activities.

The important feature of our bounty expenditures is that it has not resulted in a perceptible decrease in the number of predators. Each year in Wisconsin there are offered for bounty, quite uniformly, about 27,000 foxes, 2,900 wolves and coyotes, and 580 bobcats and lynx. Unless the bounties are discontinued, there is every reason to believe that these numbers of predators will be taken annually for a long time to come. It is unfortunate, too, that the pelts of the above animals have for years been so low in value that the monetary returns will not pay for the time consumed in preparing them. The bounty having been collected, in most cases the animals are discarded.

Every true conservationist is concerned that no species be eliminated from the fauna of our state. Yet, it is the bounty that has brought the timber wolf and lynx to near extinction. The timber wolf is so similar in habits to the coyote, and the lynx to the bobact, that selective trapping is virtually impossible. Furthermore, most trappers are unable to recognize the difference between a wolf and a coyote, and a lynx and a bobcat, due to inexperience with the rarer species.



Aside from very exceptional cases, it is difficult to find where any benefit is being derived from the payment of bounties. It is wasteful of public money and has not led to an increase in game. Unless care is exercised, fraud in one form or another is bound to occur. In 1951 the regulations in Michigan were changed to require that foxes be presented for bounty to the district headquarters of the Conservation Department instead of to the county clerks. This resulted in a surprising drop in the number of claims.

Predators have always been with us. Their service in weeding out unfit game birds and mammals may be of more importance than appears on first thought. While in a preserve for wild turkeys, I asked the supervisor what he did to control predators. He replied, "Very little. If a turkey is not smart enough to escape predators, he will not make a good wild bird, and we don't want him on the place."

# # #

UNIVERSITY LIBRARY SEEKS BOOK GIFTS

By Louis Kaplan, Director of Libraries
University of Wisconsin

Many a person has discovered that the sale of books from a private library is a disappointing business. On the other hand, many others have had the satisfaction of giving books (taxes deductible) where they are highly appreciated.

Books given to the University Library are most decidedly appreciated--because they are needed. Even the largest American university libraries (there are 18 larger than Wisconsin's) benefit from gifts, and here in Madison a number of our collections, such as in German literature, European labor and medical history, owe their distinction to gifts made by generous citizens. The number of volumes given by a single person need not be large. All gift books, whether one or many, are welcome.

What kind of books are needed? Generally speaking, those in a foreign language are more likely needed than those in the English language. But among those in the English language, for example, little-known writers of fiction are wanting.

Perhaps the best answer is the negative one. We generally do not lack outstanding periodicals (Scribners, Harpers, etc.), nor do we lack the outstanding authors (Dickens, Goethe), though some editions of their works are important to our needs.

For further information call Mr. Louis Kaplan (Director of Libraries) at ALpine 5-3311, Extension 2835, or write in care of the Memorial Library, State street, Madison 6, Wisconsin.

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EDITOR'S NOTE:

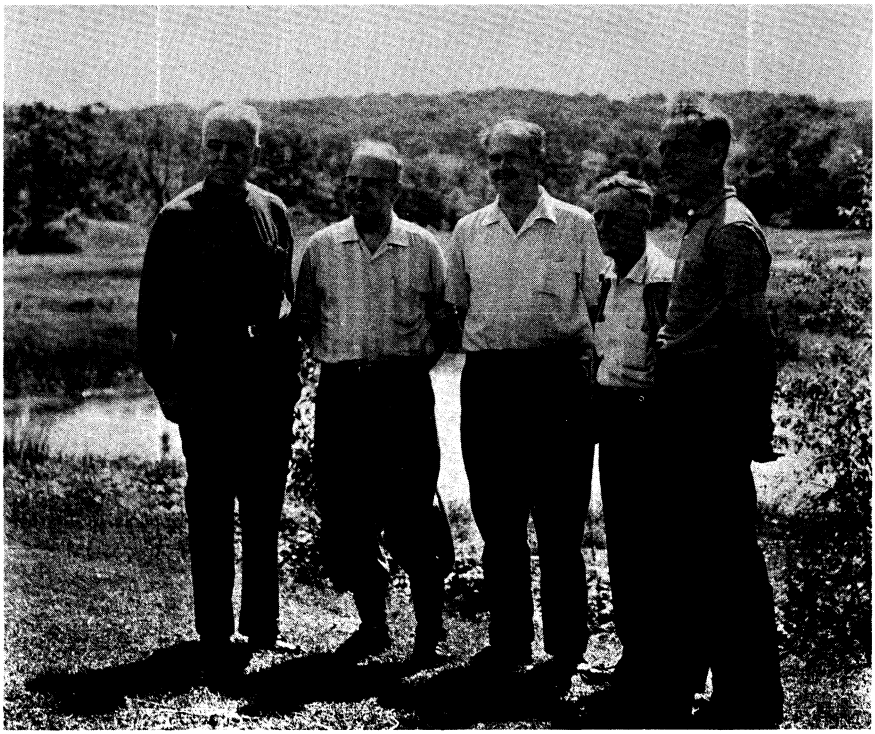
Professor Louis Kaplan, a member of the Wisconsin Academy, recently has appointed a new State Committee to advise him in the collection of gift books and to explore book sources in the Madison area. They will operate as part of the "Friends of the U.W. Libraries" which group was formed earlier. Local committees are planned and one

in the Fond du Lac area already is operating. Members of the State Committee, all from the Madison area, include MRS. WALTER ELA (chairman), MRS. OSCAR RENNEBOHM, OSCAR G. MAYER, Jr., Prof. Emeritus A. W. SCHORGER, ROBERT B. L. MURPHY, MRS. ELDON RUSSELL, ARTHUR TOWELL, JOHN WRAGE, R. E. ONSTAD, FENTON KELSEY, and MARSHALL F. BROWNE.

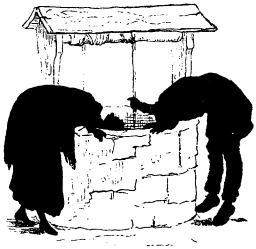
Professor Kaplan recently assumed his new position as Director of Libraries after serving in that capacity during the past year while Gilbert H. Doane was on leave for a special research assignment. Dr. Kaplan first joined the U. W. Library service in 1937 as head of the Reference Department. He became Associate Director in Charge of public service in 1946. His special field is college library history and at present he is chairman of the Committee on Research Needs for the American Library Association and of the Committee on Extension of Cooperative Cataloging of the Association of Research Libraries.

# # #

STATE BOARD FOR PRESERVATION OF SCIENTIFIC AREAS



Taken June, 1957 in Kettle Moraine State Forest, are C.L. HARRINGTON, Pres. ALBERT M. FULLER, JOHN T. CURTIS, ALVIN THRONE, and CARL WELTY. GEO.E. WATSON was absent.



DO WISCONSIN MUNICIPALITIES FACE A WATER PROBLEM?*

By George F. Hanson
State Geologist

Our use of water, as we all know, has been growing, and, as the most conveniently located sources of water are developed to their maximum capacity, it is quite natural that problems will arise in conjunction with the development of new sources of supply. But are we actually facing problems that are going to threaten our municipal, industrial or agricultural expansion, or promote these at the expense of our recreational uses of water, or are they problems to be normally expected with growth and comparable to those of the transition from adolescence to maturity?

There is no doubt that, as a nation, we have paid too little attention to the orderly development of our water resources, and that the time has come to take a good look at where we stand, how we got there and where we are going. An article in the current issue of Newsweek is devoted to "The Great U. S. Water Shortage" which, according to the Secretary of the Interior, could become America's No. 1 domestic problem. The article notes that in Dallas distilled water was being sold at 30 cents a gallon; in Chanute, Kansas, purified sewage was turned back to the city for reuse, Los Angeles is currently drawing part of its water from sources 400 miles away and is considering going 600 miles for new sources. So the tale of woe continues. What is the situation in Wisconsin?

Wisconsin is a water-rich state. The annual precipitation, which replenishes both our surface and ground-water supplies, is vastly in excess of any foreseeable consumptive needs. There is no question of "water-mining" --that is to say consuming more water than can be replenished by rainfall. Hence our problems can, in no way, be compared to those of the arid states where water-mining is practiced. In the High Plains of Texas, for instance, withdrawals are 30 times greater than the available recharge and the end of an era is in sight.

We might therefore say that our basic problem, like that of the nation as a whole, is distribution--getting our water where we want it and to whom we want it, which in turn could be boiled down to a matter of economics--what are we willing to pay to get the water. This of course is an oversimplification because once we start to move water from one area to another we immediately run into the question of conflicting interests and water rights. Recently the attention of the state has been focussed on this issue, and a legislative study is being made to determine whether our existing water laws are adequate to ensure the best use of our water in the face of conflicting interests, or whether they should be extensively revised.

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* - Selected portions of a talk delivered to the League of Wisconsin Municipalities at Milwaukee, November 13, 1957.

I believe that we must first know and inventory our problems and, if possible, determine how each could best be solved before we can determine what type of water law is best for the state. Let's look at our sources of water supply. They may be divided into surface sources and ground-water sources. About half of the total municipal pumpage comes from surface sources, principally the Great Lakes, although by far the greatest number of municipalities rely on wells.

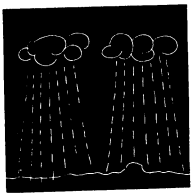
Given such an unlimited source of water as Lake Michigan one might conclude that the supply problems of a municipality were at an end. Milwaukee uses the lake as a municipal source yet headlines in the paper a few summers ago proclaimed a water shortage. The reason of course was obvious, namely that existing distribution facilities could no longer accommodate the peak demands.

Problems besetting municipalities depending on wells are not always so easily analyzed. The amount and source of the water is invisible. Detailed geologic studies, pumpage inventories and accurate measurements of water levels over long periods of time are necessary to find out quantitatively how much water is available and what the long term results of withdrawals will be. Moreover, groundwater is frequently believed to be endowed with supernatural qualities that defy the laws of science and this tends to cloud the judgment of otherwise completely rational people. Let's look at some elementary facts of groundwater occurrence.

First, the source of all usable groundwater is precipitation.

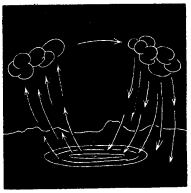
Second, it is stored in the rocks, which act as sponges, from which it is gradually discharged to lakes and streams. Note that this is not a static but a dynamic system consisting of recharge, temporary storage and discharge. The nature of the openings in the rocks determines the amount of water that they will hold (the porosity) and the rate at which water can move through them (the permeability). Formations which transmit enough water to be of use are called aquifers and, as may be expected, these vary greatly in their effectiveness. Water is a transient and removable resource that does not stand still waiting to be used, but must be used as it is available.

The first type of groundwater problem which we can define is strictly a geological problem where no aquifers are present, or where they are inadequate to supply even a very limited demand. Such conditions are particularly prevalent in parts of north-central Wisconsin. Sometimes geological work can locate better aquifers nearby but often the use of water must be restricted, surface water supplies utilized if available, or water imported. At Marshfield geophysical work was successful in locating an unsuspected buried valley filled with gravel, which now affords the town a good supply of water. At Neillsville similar work was fruitless and the city must continue to use the Black River as its water source.



The second problem is one of quality. In some states salt water presents a problem of major importance but in Wisconsin the principal quality problem is high iron which can generally be rectified by treatment plants.

The third problem is that of local overdevelopment. This is the problem that is fore-



most in the public eye. Municipalities that had always enjoyed plentiful supplies of water find that they cannot supply the increasing demand without their water levels going lower and lower and their pumping costs going higher and higher. What is happening? Is the state running dry? What is the answer? Is it the reforestation of central Wisconsin?

The answer to the first question is remarkably simple. All that is happening is that we are trying to pull water out of the aquifers faster than it can move towards the wells. It does not necessarily mean that the aquifer is incapable of supplying the water but it does mean that the costs of obtaining it are going to increase.

When a well is pumped the water level in and around the well has to drop to make the water flow towards it. This concept is as simple as saying that water flows downhill. The steepness of the gradient necessary to cause any given amount of water to flow toward a well depends upon the nature of the aquifer. If it consists of clean, coarse sand and gravel, as at Janesville, a well may be pumped at 1,000 gallons per minute with almost negligible drawdown, because those materials are highly permeable and offer little resistance to water moving through them. If the aquifer is a fine-grained sandstone a pumping drawdown of several hundred feet may be necessary to create the gradient required to bring this much water into the well.

If the pumping rate of a well is held constant the pumping level of the water will eventually become constant, and the rate at which water is flowing towards the well is balanced with the rate at which it is being taken out. If the rate of withdrawal is continually increased it can be readily seen that the drawdown in the well must also increase to steepen the gradient towards the well thus causing more water to flow towards it. A point is then reached where the cost of raising the water may become excessive and alternate or auxiliary sources must be sought. This situation has arisen notably in Green Bay and Fond du Lac and is becoming increasingly important in some municipalities in the Milwaukee-Waukesha area.

Let me emphasize that this problem is local. The drawdown in the aquifers, which technically is called the cone of depression, extends a remarkably short distance away from the centers of pumping. For instance, the effects of the concentrated pumpage at Fond du Lac are limited to within a circle of about eight miles radius. No matter how much water may exist beyond this radius it will in no way influence the amount of water that can be withdrawn from the wells under the present pumping conditions. One of the most common misconceptions is the belief that the water that is withdrawn from wells comes from scores of miles away. In Wisconsin this is simply not true and, whereas I certainly do not wish to belittle the over-all benefits derived from good land management, reforestation programs in central Wisconsin do not affect the groundwater levels in southern Wisconsin. This type of problem results from overdevelopment. There is still as much water available as there ever was and if pumping ceased the water levels would soon recover, or if the pumpage was held constant the water levels would become stabilized.

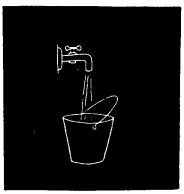
At Green Bay measurements over the last ten years showed that the total pumpage of the city alone was increasing at the

average rate of about 80,000,000 gallons per year. It is scarcely surprising that the water levels were also declining at the approximate rate of 10 feet per year. The city decided that the best long range solution was to construct a pipeline to Lake Michigan. On August 10 this year the new system was placed in operation. On November 4 the water levels had recovered from 345 feet below the surface to 180 feet which averages almost two feet per day. Thus after a shutdown of 86 days the water levels are now 60 feet higher than when we began measurements ten years ago. They are still recovering although the rate is slowing down. It will be some time before a stable condition is reached. In the meantime a presently undetermined amount of industrial pumpage continues (it was 3.4 mil. gpd in 1949) and the cities of Preble, Allouez and Ashwaubenon continue to pump about 2,000,000 gpd.

The solutions to this type of problem are multiple. Economic factors may permit pumping from greater depths. Fond du Lac is pumping at about 240 feet which still leaves some 640 feet of water in the wells. At Wauwatosa the wells are about 1,700 feet deep, and the pumping level is about 450 feet--probably the lowest in the state--however, 1,250 feet of water still remains in the wells.

Another alternative is to disperse the wells so as to enlarge the area of withdrawal and lessen the interference between them. Actually this procedure is routine municipal planning; however, in many cases a municipality may not possess enough land to disperse its wells effectively and may be forced to go outside its limits. This brings up the possibility of conflicting interests. If the use of water is contested who shall have the right to use? How and by whom shall this right be determined? Again we are back to the adequacy of our present laws to meet this problem. If they are found to be inadequate, should they be modified or should a new and comprehensive water code be adopted? If we wish to delimit one single problem that is facing municipalities and all users of water, this is it.

Personally, I believe that for the present our existing laws, with some modifications, will suffice. I do not believe that we yet have enough basic information to permit us to analyze all our water problems satisfactorily, much less propose a solution that will be universally beneficial. I feel that we have now reached a normal stage of growth when our present suit of clothes is getting tight and might be let out at the seams. Window shopping is in order but it would take a very expert salesman to convince me that it is immediately necessary to purchase a brand new suit.



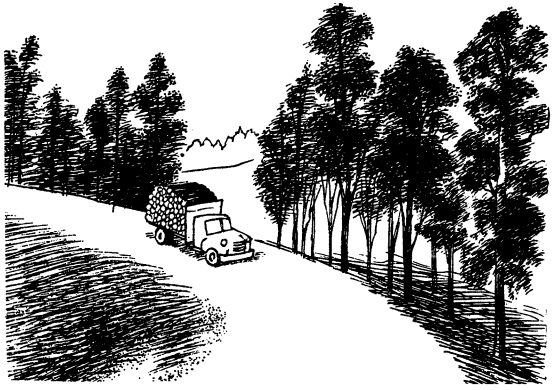
Perhaps we shall find in the not too distant future that we do need a drastic revision of our water laws, but in the meantime I would urge that the program for the collection and interpretation of basic data on our water resource be accelerated so that when the time comes to implement a comprehensive water law it may be one tailor-made to fit the specific needs of this state and be based upon a factual and not fanciful analysis of the nature of the problems that confront us.

# # #

PAPER—GROWTH OF A MAJOR WISCONSIN INDUSTRY

By C. R. Conlee, Vice-President and Promotion Manager
The Milwaukee Journal

Paper is big business in Wisconsin--actually the third largest industry in the state, surpassed only by machinery and food products. Sales of paper and paper products by Wisconsin firms were well over seven hundred million dollars in 1956--even larger than the state's dairy industry.



Wisconsin leads the nation in the pulp and paper industry. Out of the 38 states with paper, paperboard or pulp mills, Wisconsin is at the top of the list in number of employees, investment in mills, and total volume of sales. Production has steadily increased despite the opening of other paper making areas. Since World War II, Wisconsin's paper mills have spent millions of dollars in plant improvement.

The paper on which you are reading this was made in Wisconsin. And chances are mighty good that the letters you dictated yesterday were typed on paper made in Wisconsin, too. The big kraft bag in which you brought home the groceries probably was made in Wisconsin. Yes, even the products you bought were packed in a paper product that, in all likelihood, was made in Wisconsin.

Enamel book paper and high quality specialty stocks, wrapping paper, corrugated boxes, sanitary napkins, toilet tissue, industrial wadding, insulation--you name it--Wisconsin makes it. Nearly 400 different items are on the list of paper products made in the state, in many thousands of varieties and grades.

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* Selected excerpts from an article published in the September 1957 issue of copyrighted TORCH MAGAZINE of the Milwaukee Advertising Club with permission of the author and publishers.

Wisconsin's paper industry was founded more than a century ago in Milwaukee. Today, the industry has 48 primary paper and paperboard making establishments in 34 communities and nearly 90 other plants that convert paper or paperboard into finished products. The highest concentration of paper mills in the world is along 35 miles of the Fox River between Lake Winnebago and Green Bay.

The making of paper is dependent upon a plentiful supply of good water and the trees from which to make wood pulp. Actually, about 95% of today's paper is made from wood pulp, with the balance coming from cotton and linen rags, sorted waste paper, straw from cereal grains and sugar cane waste. About one-fifth of the annual cut from Wisconsin forests is converted each year into pulpwood. But with giant machines consuming the woodpulp at a record rate, most of the pulpwood has to be imported from other states, including large quantities from the Pacific northwest. Ready rail and water transportation facilities keep pulpwood supplies flowing to the hungry mills.

Originally, spruce and other softwoods were considered to be the only types suitable for papermaking. It appeared then that Wisconsin's timberlands would last forever, but those spruce stands are long since gone. The simple fact is that more spruce was being consumed than was being grown.

So the mills turned to balsam, hemlock, jack pine and others. A fairly recent development has been the use of aspen, a soft type of hardwood that was once considered a weed tree. A revolutionary change came when pioneering Wisconsin mills developed methods of using abundant hardwoods such as oak.

The use of timber for pulp and paper today is well illustrated by a report just released by the state forestry committee. It shows total timber production for Wisconsin in 1956 at nearly 100 million tons--enough wood to stretch a four by eight foot band of wood around the world three times! Pulpwood forests, according to this report, produced 35% more wood in 1956 than in 1955, the previous record production year.

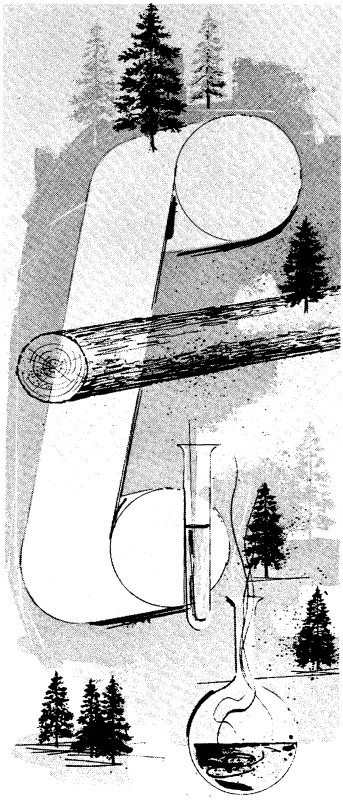
Wisconsin Boasts Variety of Papermakers

Some of the state's biggest machines are found at Neenah, at the Kimberly-Clark Corp. plant, the state's largest paper company. K-C operates four mills in Wisconsin, with others in New York, Tennessee, Michigan, California and Ontario. Extremely diversified, Kimberly-Clark makes coated printing papers and writing papers, industrial wadding, insulation, beauty and barber products, as well as sanitary napkins and tissues, household papers

and wallpaper. Kimberly-Clark's consolidated net sales for the year ending April 30, 1957, were $314,669,263. This figure is up almost 25% over the sales figure of the preceding 12-month period.

Still another giant is Marathon Corp., operating plants in six Wisconsin cities and others in Michigan, New York, Washington, California, Georgia, Alabama and Canada. One of the big mergers in the paper industry took place in 1953 when Marathon teamed up with Northern Paper Mills of Green Bay. The Marathon line now includes packaging materials, towels and napkins, toilet tissue, facial tissues, waxed paper and many others. Marathon Corp., whose executive offices are at Menasha, reported net sales of $152,886,403 for the fiscal year ended October 31, 1956. Marathon's board chairman, David Clark Everest, was one of the top personalities in the industry.

Third largest paper company in the state is Consolidated Water Power & Paper Co. It specializes in enamel book paper, but also produces wax tissue and wrapping papers, paperboard and sulphite pulp. Consolidated completed its first mill at Wisconsin Rapids in 1904 but now has additional sites in Wisconsin at Biron, Whiting, Appleton and Stevens Point. Consolidated's combined sales in 1955 were more than $62,000,000.



Equally well known is Nekoosa-Edwards Paper Co.,of Port Edwards, one of the state's "big four" in the paper industry. Nekoosa-Edwards specializes in fine writing and business papers and specialty food papers and wrappings.

Nekoosa-Edwards is another of the state's paper-making firms that has developed markets for new kinds of paper and continues to make extensive use of imaginative marketing practices. Nekoosa-Edwards Paper Co. (Nepco for short) was one of the first companies to work on the

possibilities of using low-grade oak in paper production. Nepco has machines which produce 85 tons of quality paper a day.

With plants in Green Bay and West DePere, Charmin Paper Mills, Inc., is well known from coast to coast. Charmin produces bathroom and facial tissues, kitchen towels and dinner napkins in addition to a range of paper products for industrial use. Growing rapidly, Charmin's sales have climbed from $6,000,000 to $22,000,000 in 10 years.

Working from the original tree right down to the finished product is Badger Paper Mills, of Peshtigo. Badger makes watermarked bond, mimeo and duplicator papers and waxed papers. Riverside Paper Corp., Appleton, manufactures sulphite writing papers, mimeograph and a variety of ledger papers. In addition Riverside makes duplicator, drawing, poster and construction papers and white and colored sulphite specialties. By conversion, Riverside manufactures ruled and plain school papers of all kinds. The Appleton Coated Paper Co. is the nation's leading producer of colored coated papers.

In many cases in Wisconsin, the mills have set up converting plants to take the primary product from the mills and fabricate it into a multitude of finished products. However, most of the converting plants are independent businesses. The conversion of kraft and paperboard into corrugated and solid fiber shipping containers is a story in itself. Wisconsin has 22 firms making paper boxes--manufactured to ship almost anything. Machines weighing as high as 3,500 lbs., for instance, can now be shipped in containers converted from paperboard of Wisconsin mills.

And the story of paper in Wisconsin certainly would not be complete without full credit being given to the work of two institutions that have been of tremendous help to the industry both in Wisconsin and throughout the country--the Forest Products Laboratory at Madison and the Institute of Paper Chemistry, affiliated with Lawrence College.

Paperboard consumption nationally reached 35 million tons during the last year. With estimates running well over 50 million tons of paper and paperboard being used in the United States by the year 1975, there's every indication that Wisconsin will share heavily in the industry's success.

CHECK YOUR CALENDAR FOR THE NEXT ANNUAL MEETING AT
WISCONSIN STATE COLLEGE, WHITEWATER,
SATURDAY, MAY 3, 1958
FEATURING THE KETTLE MORAINE AREA

COLLEGE EDUCATION IN 1982*

By Douglas M. Knight, President
Lawrence College

The question of what we shall be doing twenty-five years from now in college education is both exciting and dangerous.

Prophecy has a way of turning out to be wrong, not because it is too radical, but because it is too conservative. It imagines 'differences' between the present and the future, but still manages to make the future look like today. It will not look remotely that way, however; and there is deeply serious value in a twenty-five year look ahead, because many of the things that seem to me, at least, most clearly in our future must be planned for now.

It seems to me that there are three major aspects to this prophetic vision of 1982; the technical and physical change that we shall reflect, the human change (that is, the different pattern and need of education) that we shall be encouraging, and the purposes that will be unchanging in the midst of so much change.

We are likely, of course, to think of technical change as affecting business rather than education. Actually, however, it affects both in the same way and at the same level of importance.

Technical change never replaces the need for highly responsible human beings; it merely relieves them of mechanical and repetitious burdens. As a result I can see technical advances being a great help in the offices of the registrar and the business manager. I can see them as of relatively little help in the classroom, despite all that we are saying these days in favor of educational television.

I think it quite possible that we shall be making use of the film or television presentation of eminent lecturers; but I also think that we shall have to rely

* - Entire text of a copyrighted guest article for an Appleton Post-Crescent Series "Twenty-Five Years From Now" published July 6, 1957 and reprinted here with permission.

as heavily as now upon discussions carried on and papers written by individual students, guided and judged by individual teachers.

Technical change will actually be less important for us than psychological change--the development of new attitudes by us toward our students, and by them toward the meaning and value of their education. The most vital aspect of this change, I think, will be its emphasis on individual and independent study. American education at all levels is deeply concerned with hours, credits, units of time and work.

In this process, and with this emphasis, we often let the far more crucial purposes of education slip by us. I believe that over the next quarter-century we are going to remedy this mistake, not necessarily by the European methods of elaborate examinations at various levels but by more emphasis on ways of using what has been learned, ways of getting beyond the present evils of both American and European systems toward the idea of college educations as the time and place of learning how to use the mind effectively, creatively, and independently.

We shall require fewer courses and more extended projects, concluding with a thesis or honors essay by every student in the field of his major interest.

We shall make these changes above all in order to meet and resolve two problems that will be even more evident in twenty-five years than they are today. The first is the steadily greater complexity of the material which undergraduates are expected to master, a complexity which involves not only the sheer mass of fact but the relationship among subjects and areas that were once thought of as being separate--physics and biology, for instance, or anthropology and psychology.

We shall be expecting more and more of this flexible mastery of knowledge, this recognition that the 'facts' of a given subject often assume a different significance and a different meaning as we change their context.

Along with this steadily increasing demand of subject matter goes an equal increase in the demand made upon us by our society itself. The outer pace and pressure of life call for more and more resources of inner security, inner strength. The education of the future must deal with complex ways of life as well as complex kinds of knowledge.

It must recognize that graduates will find their careers all over the world, that they will often change their professional responsibilities, that they must adjust

to new communities and new demands with sensitivity as well as firmness.

To make such a remark about the major changes in education during the next twenty-five years, however, is really to imply that in certain central ways the best kind of education will not change at all. It has always served inner stability, the insight as well as the outer effectiveness of those who submit themselves to it.

The need for this kind of education will become steadily more acute, steadily more obvious; but the nature of it will not essentially change. Its increased rigor and flexibility will be put at the service of human qualities which persist and endure despite all technical changes; curiosity, disciplined learning, and the relationship between inner life and outer responsibility.

# # #

THE WATERSHED APPROACH—A BRIGHT PROMISE*

By D. H. Williams, Assistant Director
Agricultural Extension Service
U. W. College of Agriculture

We have many watershed organizations in operation which are doing a fine job in promoting good conservation practices on a community-wide basis. Perhaps the most significant fact about this development is that it has come about through action of the people themselves. That is the way a watershed works--through the planning and actions of the people living therein. Not only is this sound from an educational standpoint, but it is also the American way of getting the job done. In regard to the needs, objectives and progress of our watershed activities in Wisconsin, let us first list some of the needs. As I see them, they are:

1. Only a fraction of our cropland is handled under the best soil conservation practices.

2. We still have cows in areas that are neither good pasture nor good woodlot.

3. In spite of our gain in woodlot management, we

* - Selected remarks from an address to an Inter-agency Watershed Conference at U.W. in August, 1957.

still have more neglected woodlots than those handled according to the recommendations of our forester.

4. We still have streams too polluted or too silted to sustain good fish life.

5. We need to further develop conditions favorable for wildlife to the benefit of the hunter who walks the woods with his rifle and of the nature lover who walks the woods--perhaps with a camera. This need will become more acute as our population grows.

6. The need for water conservation begins to loom up before us in Wisconsin as a problem for major consideration. This problem commands the interest of both urban and rural citizens and will get more intense as population grows and water levels go down.

7. We will need to develop and get agreement on national policy regarding government assistance in farm programs--we are in the middle of this process now--Soil Bank or no Soil Bank.

8. We need better understanding between the several groups of American citizens who have a stake in conservation.

From the above, we see that there is more to do than we have already done. The part we have to do will be extremely difficult because of the ever-increasing complexity of our problem. The watershed approach offers the best solution because it implies the banding together of all the people of the community to solve the problem. In the face of the needs which I have listed above, what then, will be our objectives in meeting these needs? I would like to list a few goals for your consideration:

1. Creating a consciousness of the problem before us as Americans with a fine heritage to maintain. The day of neglect and waste of our natural resources is not yet past. It is true that a citizen has the legal right on his own property to continue this plunder. We can through demonstration and patient education make him conscious of his responsibility.

2. As agency representatives, one of our objectives must be that of stimulating the desire to do something about it. The people themselves must organize the watersheds but it is our duty as trained professional people to give to them the facts which will enable them to act. We will be derelict in our duty if we fail to point out the alternatives with and without action.

3. Helping bring together all groups of our citizens concerned--the farmer, the sportsman, the nature lover, the urbanite, the businessman, the professional man, the clergy, the youth groups all have a stake.

4. Helping to maintain interest after a watershed has operated a few years.

5. More careful analysis of the watershed approach as a means of bringing about good conservation. We believe in it as a method, but what are its strength and its weaknesses? More good research studies need to be made. As professional people, we have built our programs around the findings of research in our various fields such as agriculture, forestry and wildlife. Research should be equally valuable to us in helping to find the most effective methods of getting adoption of conservation practices.

The watershed approach to getting conservation on the land holds bright promise, but no single individual, group, or agency can bring this about. Conservation and the watershed approach are to be achieved only through effective teamwork of all of our agencies working with legal governing bodies and with the people.

# # #

MIDWEST BENTHOLOGICAL SOCIETY MEETING

Academy member KENNETH M. MACKENTHUN, Public Health Biologist with the Wisconsin Committee on Water Pollution and President of the Midwest Benthological Society, has announced that their annual meeting will be held on April 17-18, 1958 at the Laboratory of Hygiene on the UW Campus in Madison. The group includes members from Wisconsin, Minnesota, Michigan, Indiana, Illinois, Iowa and Missouri. Interested individuals are welcome to attend this meeting and also to affiliate with the Society. A statement of their purpose is quoted:

"The purpose of the Midwest Benthological Society shall be to disseminate research data, ideas, reprints, and general information on methods and subjects of interest to bottom fauna biologists; to exchange identified specimens and general information between represented states on the ecology of various species, life histories of bottom fauna and flora, production, and identification of difficult groups; to establish pollutional status of specific organisms through exchange of ecological data; to consider the relationship of bottom organisms to fish; to standardize sampling methods and data presentation; to exchange bio-assay data; to discuss new methods of aquatic nuisance control; to promote related educational activities; and, to review current literature and report on organizational meetings attended by members of this group."

# # #

DOMAIN OF LETTERS

The author of the Tribute to a Classicist must perforce appear in the Review as unrevealed -- except for certain somewhat clearly apparent characteristics of spirit and, as well, of execution.

OLIVER H. KNIGHT, from his vantage-point as Coordinator of Editorial and Communications Services of the University of Wisconsin Extension Division contributes the sagacious survey and estimate of "Mass Communications and Adult Education."

FOR WALTER R. AAGARD

To your clear fountain many a thirsting mind
Has come, and none has dusty turned away;
Others that might have blindly run astray
Have learned with you to see, to seek, to find.
You've marched with Xenophon, sung with Homer blind;
You've known how well to labor, how to play --
The time to laugh, and when to have your say --
What things to take, and what to cast behind.
Your heart was ever generous. You have given
Of clarity, of fairness, firm and clean,
And best with cheerful constancy have striven
In your own life to prove the golden mean,
That highest good the human spirit seeks --
That sunny ancient wisdom of the Greeks!

---Philos.

MASS COMMUNICATIONS AND ADULT EDUCATION

By Oliver Knight, Coordinator
Editorial and Communications Services
U. W. Extension Division

The "aspirin age" may be giving way to the era of the egg-head. An "egg-head" has been defined as any college-trained person, which means there are more egg-heads in this country now than ever before.

No matter how that statement be interpreted, the fact remains that there is a boom in higher education with the worst--or best--yet to come. Interestingly, the education boom is not confined to the campus classroom. For adult education enrollments are growing at a faster rate than undergraduate, nationally.

In Wisconsin, much of the demand for adult education is absorbed by the University of Wisconsin Extension Division through classes in various state cities, correspondence study, institutes, conferences, workshops and specialized assistance. The measure of this demand may be seen in enrollment in credit and non-credit classes alone. Established in communities all over the state and taught by University instructors, these classes now have an enrollment of about 13,000 persons a year.

For various reasons, adult education becomes a specialized form of instruction. The instructor often is on his mettle more than with undergraduates, and is more prone to adopt and adapt different teaching approaches and techniques. Too, the borderline areas between disciplines tend to become even more shadowy than in ivied-halls.

One of the new approaches in adult education is through mass communications. While mass communications have always been recognized as an educational and informational medium, it is only in recent years that a conscious effort has been made to deliberately utilize them in adult education. The University of Wisconsin Extension Division, which has pioneered many concepts in education beyond the campus, is now, for example, giving serious study to integrating all of its mass communications activities so that their flexibility and impact may be utilized to the fullest in adult education.

Within this context, mass communications is a medium in which a mechanical device is interposed between the communicator and his audience. The mechanical device--be it press or camera--acts as a multiplier in transmitting one message to audiences of any size and disposition. Within this context, further, mass communications is understood to include newspapers, magazines, all other printed material, radio, television, and motion picture film. Lectures, concerts, sermons and dramatic presentations are thus excluded, even though they may reach a "mass" audience in terms of a large gathering in one place at one time.

One of the most exciting elements of mass communications in adult education is television. And the point to be emphasized is that this is <u>not</u> confined to educational television stations. Much work has been done at Wisconsin Extension, and continues to be done, with education via television.

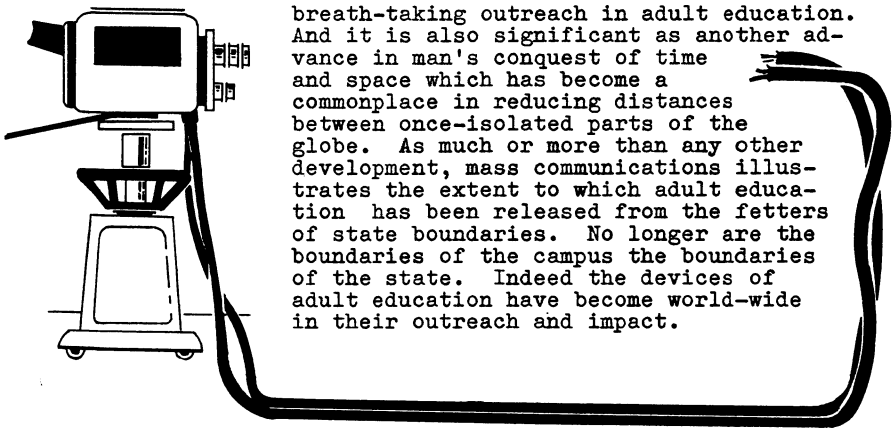
Wisconsin Extension already has made eight University courses available for multiple television showings, either through film or kinescope. Two of the courses, in psychology and German, were offered for University credit through home study, involving a combination of television and correspondence study. Other courses have been accompanied by home study guides. These courses are televised by Wisconsin commercial stations, as well as by educational stations.

Closely allied to television, the motion picture film proved its worth beyond question in training of millions of soldiers during World War II. Today an accepted part of the teaching method, in university as well as public schools, it is particularly adaptable to adult education, especially in courses or programs of short duration where the maximum of information must be imparted in a minimum of time. The great flexibility and combination of symbol, idea, sound, movement and impact are all contained in the film, and give it an educational wallop.

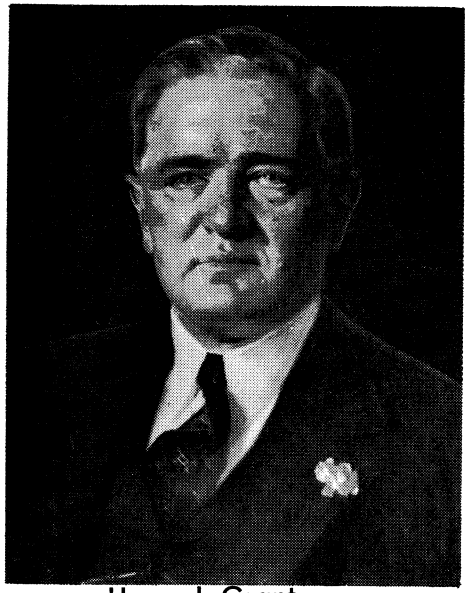
Long established as a medium of adult education, radio is used by universities throughout the nation. In addition to the extensive programming of WHA, more than 50 Wisconsin stations use a weekly radio program from the University Extension Division.

The press--as a generic term representing all printed materials--is a pervasive device of mass communications in adult education. To again draw an illustration from Wisconsin Extension, publications have been used repeatedly to spread knowledge and information drawn from Extension institutes and conferences, as well as from research by Extension scholars.

Likewise, newspapers and magazines offer a medium of adult education communication. Articles and feature stories drawn from institutes offer editors a refreshing change of content and spread the beneficent results of constantly broadening knowledge to audiences of unlimited size. But a word of warning must go along with any comment on the press as a medium of adult education. That warning is this: To avoid the stigma of propaganda and to guard against a boomerang from well-intentioned but naive educators, such material must be handled by staff people versed in the realities of press relations.



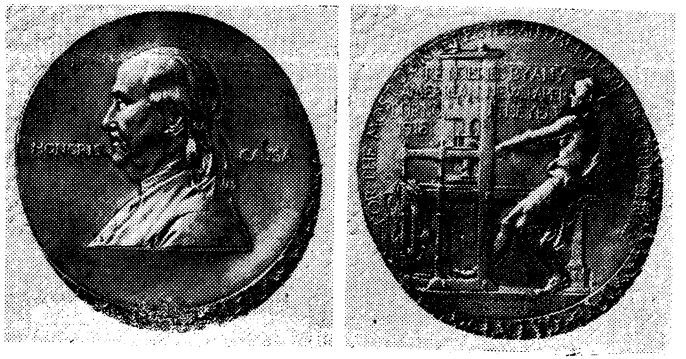
From even such a cursory review as the foregoing, it can be seen that mass communications offers a breath-taking outreach in adult education. And it is also significant as another advance in man's conquest of time and space which has become a commonplace in reducing distances between once-isolated parts of the globe. As much or more than any other development, mass communications illustrates the extent to which adult education has been released from the fetters of state boundaries. No longer are the boundaries of the campus the boundaries of the state. Indeed the devices of adult education have become world-wide in their outreach and impact.



Harry J. Grant

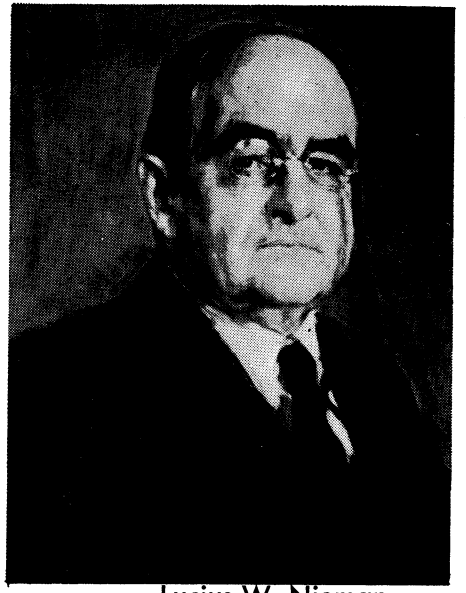
GRATEFULLY YOURS — AT 75!

75th Anniversary Year The Milwaukee Journal



—Journal Staff

The Journal's 1919 Pulitzer prize medal



Lucius W. Nieman

The Journal's feeling as it passes its 75th birthday is not of pride or pomp but of gratefulness.

It is grateful that it was born into a community and a state which, through a long period of pioneering, had laid a solid foundation of life. The capacity for hard work, frugality, respect for law, alertness to progress, the touch of human kindness--these were, and are, the characteristics of the great area The Journal serves. It does not underestimate them as factors in its own success. After all, the community aids the newspaper just as the newspaper aids the community.

The Journal is thankful that in its formative period it had in L. W. Nieman a leader who gave it the editorial independence, the freedom from financial entanglements and the integrity that enabled it to serve all the People. He broke the molds of the old partisan and class organs to produce a new kind of newspaper.

And when the Journal needed a builder to create the institution that its editorial and news success called for, it had such a man in Harry J. Grant. He made it truly metropolitan.

But great as has been the leadership of these two men, they could not have succeeded without the long line of able men and women who have served in all departments of this newspaper. For all those whose lives have gone into the making of The Journal, from 1882 down to the present, it has on this anniversary a grateful "Thank you."

The Journal owes its opportunity for usefulness, even its very existence, to that American way of life which embodies freedom of thought and communication. As one looks at that in retrospect--in the light of what has happened over vast areas of the earth--how precious it becomes! The Journal has been a battler for that freedom, and it will continue to be.

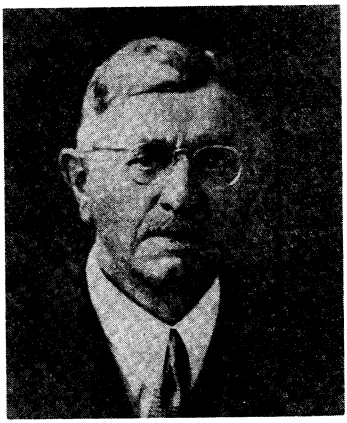
This does not mean that it will remain static so far as social and economic developments are concerned. One of its characteristics has been its ability to change with the times.

It began its life in an era of cobblestone and wood block pavement, of gas lights, of horse drawn cabs and street-cars. Its pages have told the story of man's endeavor from that time down to this amazing present of the atom and the satellite. Always its counsel has been to adjust to these changes without losing sight of fundamentals.

The Journal's written motto is First--by Merit. Its unwritten motto is to be ready for--and worthy of--all the tomorrows. (Editorial quoted from copyrighted Milwaukee Journal of November 17, 1957)

KURT STOCK—HORTICULTURIST

A Retirement Profile



After serving as a director of the Fruit Growers Cooperative in Sturgeon Bay for 35 years, KURT STOCK resigned the post last May. He acted as President from December 1938 until 1951, and as General Manager from 1941 to 1946, and for some months in 1949. He designed and supervised construction of the Sister Bay plant of the Cooperative.

Trained as a metallurgical engineer at the mining academy at Freiberg in Saxony, he followed that profession for some years in the midwest and east. Forced to take a year's leave of absence due to ill health, he stopped off at Fish Creek to visit friends in 1919 and never went back to his metallurgical career. Becoming interested in rural life, he purchased a 40-acre apple orchard in Door county. On an adjoining 40 acres he planted cherry trees and had them in bearing by the early 1930's. He studied soils and insect pests and became a practical horticulturist. Almost immediately he affiliated with the Academy and has been an active member since 1922.

Mr. Stock was one of 10 Wisconsin citizens to be honored in 1949 for their outstanding contributions to rural life. His citation from the University of Wisconsin read, "to one who has served an industry by applying scientific findings and sound business principles to the production, handling and merchandising of cherries and who has widened the market for the crop." (From story in copyrighted Door County Advocate, May 21, 1957).

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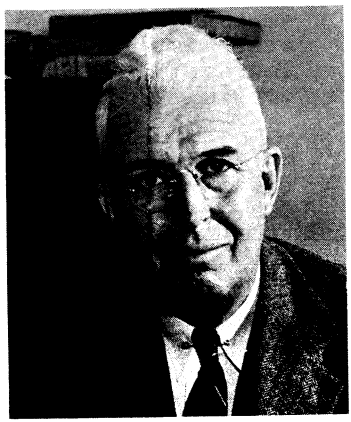
LAURENCE F. GRABER—AGRONOMIST

A UW Retirement Profile Revised and Abridged



LAURENCE FREDERICK GRABER, Wisconsin farm boy and a pioneer exponent of grassland farming in Wisconsin, recently retired from his position at the University but he could never relinquish his title as Mr. Alfalfa. He leaves behind 47 years of evangelism for what is now the state's most important crop.

In 1910 when Graber came to the University as an assistant in agronomy, his first assignment was to build up the alfalfa acreage here from the low total of 18,000 acres. By 1936 alfalfa acreage passed the million mark and by 1953 it was over two million acres. He is credited as the man who did more than any other individual to cover Wisconsin with the more productive forms of grass --the alfalfas, the clovers, brome and ladino. As early as 1925 he conducted research which led to the acceptance of

renovation as a means of pasture improvement throughout this part of the country and later around the world.

Graber also developed the first plan of custom lime grinding at local quarries in 1918 with a demonstration on an alfalfa field on the Green County Farm. At this meeting one local lime grinder took orders for 3,000 tons of lime and the following year county agents met at the same demonstration to put in effect a state-wide plan for local lime grinding. Now Wisconsin uses more than a million tons of locally ground limestone annually.

Though he is well known for his promotion of a stable Wisconsin agriculture through good forage, Graber has achieved recognition far beyond the boundaries of the Badger state. He was chairman of a committee with the International Crop Improvement Assn. for the first certification of alfalfa seed in this country in 1918. In 1949 he was named president of the American Society of Agronomy and was recognized as the leading authority on alfalfa in the nation. He has been named an honorary fellow in the American Society of Agronomy and the AAAS. For many years he has served on the planning committee of the National Foundation Seed Stock Project. This organization produces basic seed stocks from which commercial supplies of certified seed are grown.

Graber was born on a Mineral Point farm in 1887. He graduated from the University of Wisconsin in 1910 and received his M.S. there in 1912, his Ph.D. from the University of Chicago in 1930. From 1910 to 1921 he rose from assistant in agronomy to full professor. He was chairman of his department from 1940 to 1949. From 1918 to 1925 he doubled as a district supervisor of Wisconsin county agents. He was an inspiring teacher and his new approach to basic agronomy has been recognized throughout the nation. A textbook and a laboratory manual for students in agronomy are in wide use. He has published a number of research papers and bulletins of which his "Half Century of Alfalfa in Wisconsin" (1953) is one of the most complete monographs on alfalfa ever done.

So esteemed was he by his colleagues that in 1951, six years before retirement, his portrait (by the late Julius Rehder) was presented to the University at a special honorary banquet. Graber has been an active member of the Wisconsin Academy for almost three decades, since 1929.

# # #

A NOTE ON THE COVER PAINTING

Prof. D. GIBSON BYRD was born in Tulsa, Oklahoma, where he graduated in art from the University of Tulsa. His graduate work was done at the University of Iowa. He has taught public school, and came to the University of Wisconsin from the Kalamazoo Art Center in Michigan.

He has exhibited in many of the middlewestern states and his paintings, like the one on the cover, are clearly realistic in subject though their interpretation is a personal one of strong emotional qualities.

At present he is teaching the art courses for prospective elementary teachers and is also carrying on the work in museum and gallery techniques. He is faculty chairman of the departmental Exhibition Committee. His work is represented in the Laurence Fleischman Collection, Philbrook Art Center Collection and the Allen Bradley (Milwaukee) Collection. --Frederick M. Logan

JUNIOR ACADEMY NEWS

JUNIOR ACADEMY REPORT

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

The retirement of C. EMIL DUWE, one of the original members of the State Committee on the Junior Academy, has been learned of with much regret. Mr. Duwe has been one of the staunch supporters of the Junior Academy since its founding in 1944. He has moved to Oregon where he is expecting to enjoy the hunting and fishing of that area.

ROBERT R. SUCHY of the Milwaukee Public Schools is joining the State Committee. Mr. Suchy is a science consultant and television advisor for the Milwaukee Public Schools.

At the time of writing of this newsnote most of the spring events have already been scheduled. The district meetings in Appleton and Milwaukee will be held on March 29, that of the western district at Eau Claire on April 12. The State meeting with the Senior Academy will be held at Whitewater on May 3. The Junior High School Statewide meeting will be held by special invitation at McKinley Junior High School, Kenosha, possibly on May 10. This is a very special occasion as it marks the 10th anniversary of the founding of the meeting for junior high schools at Kenosha under the sponsorship of MARY A. DOHERTY, member of the State Committee and sponsor of the Seminar Club of Mary D. Bradford High School, Kenosha.

Science fairs which the senior scientists should plan to visit to see work done by the young people of Wisconsin will be held on March 24 and 25 at Bradford High School, Kenosha and at Marquette University, Milwaukee, on April 11 to 14. The Kenosha County Fair is sponsored by the Seminar Club of Kenosha; the Southeastern Science Fair is sponsored by Marquette University and the Milwaukee Journal.

Marquette University is again offering a four year scholarship to the outstanding student of the Wisconsin Science Talent Search. The Junior Academy Committee also hopes to again raise sufficient funds to offer several Junior Academy scholarships for outstanding work in the Junior Academy and the Wisconsin Science Talent Search. Last year two such scholarships of $100 each were awarded and it is hoped that the program may be expanded.

Each year the Junior Academy compiles a list of the science clubs of Wisconsin active during the current year. Last year a remarkable number of clubs and membership was listed. There were 165 clubs with a membership of 4,503 boys and girls active in this state. The list indicates the interests and activities of each club as well as the sponsors and other information. Any senior Academy member wishing a copy of this club list may obtain one by writing the chairman of the Junior Academy Committee, J. W. Thomson, at the University of Wisconsin Botany Department.

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ELECTROPHORESIS IN THE STUDY OF DISEASE

By Robert W. Adler
Columbus High School, Marshfield

I constructed an apparatus patterned after the Durrum hanging strip electrophoretic cell with baffle system modifications of my own. My work was concerned with observations made by means of electrophoretic separations of blood serum proteins from healthy individuals and from persons ill enough to be hospitalized. All blood serum samples were obtained from the local clinic and hospital. The electrophoretic separations showed the five serum proteins: albumin, alpha$_1$, alpha$_2$, beta, and gamma globulins. From the electrophoretic patterns it was possible to observe the variation of the protein content in different sera for different diseases. The analysis consisted of spectrophotometer readings for the eluted dye (bromphenol blue) taken up by each protein, and densitometer scans showing density curves obtained from the protein patterns dyed with fast green. In my tests, I found that an increase or decrease in one or more proteins could be characteristic of a specific disease.

By far the largest part of my investigation includes five classes of diseases: cancer, kidney disease (nephrosis), parasitic disease (staphylococcal infection of the skin), infectious disease (paratyphoid), liver disease. Of the ten tests made of serum of nephrotic patients I observed three distinctive abnormalities recurring in the protein balance. Albumin and gamma fractions were considerably reduced while alpha$_2$ globulin was increased.

Among the cancer patterns my most representative results came from the separations and their scans for empyema, which showed a large increase in the alpha globulins along with an expansion of the gamma globulin. For pyodermia, the only parasitic disease serum I analyzed, the patterns and scans indicated a moderate drop in albumin and a rise in the beta and gamma region. The electrophoretic separations and their scans for blood serum from one having paratyphoid outline an unusual drop in the albumin protein and a distortion throughout the globulin fraction especially the gamma zone.

From a special series of nearly 30 tests I made with serum patterns for various liver diseases I have reason to affirm that an unusual expansion of the gamma globulin is characteristic of most cases of liver cirrhosis and hepatitis accompanied by an albumin drop in many instances. In hepatobiliary cases, however, I observed that the beta globulin expansion was especially striking, in addition to a gamma globulin increase. In a sample for cancer of the liver, beta and alpha$_2$ globulins were expanded.

Data from more cases and at various stages of diseases would have to be collected before definite conclusions could be drawn about reliability of electrophoretic patterns for clinical purposes but electrophoresis has a place in the analysis of human blood serum.

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THE PHENOL COEFFICIENT OF ORAL ANTISEPTICS

By Margaret W. Hicks
Nicolet High School, Milwaukee

In determining the phenol coefficient of various oral antiseptics, I hoped to compare their effectiveness against the organism Streptococcus faecalis. I used a slight variation of the test as established by George F. Reddish (The Newer Knowledge of Bacteriology and Immunology, pp. 301-304). I used only commercial antiseptics--Bactine, Cepacol, Lavoris, Pepsodent, and Thymo-Borine. Oral antiseptics were used full strength and in dilutions of one part full strength antiseptic to five parts water and higher. As a constant I used a four percent solution by volume of phenol, or carbolic acid, in water. Dilutions of phenol were made similar to those of the antiseptics.

In my tests I used Streptococcus faecalis, a non-virulent organism, forming chains of single-celled balls and found in the intestines of man. I chose S. faecalis because I did not want a virulent organism, because it is similar to that organism which causes Streptococcus throat, and because an antiseptic killing S.faecalis might kill that organism which causes Streptococcus throat.

My media--nutrient agar for Petri dishes and test tube slopes, and nutrient beef broth for test tubes--were sterilized in a home pressure cooker at fifteen pounds pressure for fifteen minutes. Every twenty-four hours for a three day period the bacteria were transferred to fresh, sterile test tubes to activate the culture. Then five cc. of each dilution of an antiseptic and the phenol were placed in separate test tubes. At a set time, one-half cc. of the active beef broth culture was added to each dilution. After intervals of five, ten, and fifteen minutes from inoculation with the culture, one platinum loopful of dilution-culture mixture was removed and streaked on a sterile nutrient agar Petri dish. The plates were incubated at 34° C. for forty-eight hours.

At the end of incubation if growth was visible to the naked eye, a positive sign was placed on the chart; if there was no growth visible to the naked eye, a negative sign was used (see charts). To determine the phenol coefficient, place the last number of the weakest dilution of an antiseptic killing in five minutes but not killing in ten minutes in the numerator of a fraction: $\frac{10 \text{ Cepacol}}{}$ (see Chart 2). Likewise, the weakest dilution of phenol killing in five minutes but not in ten minutes is placed in the denominator: $\frac{10 \text{ Cepacol}}{2.5 \text{ Phenol}}$ (see Chart 1). By reducing the fraction, the phenol coefficient of Cepacol is 4.0.

An antiseptic with a coefficient of under 1.0 would be poorer in effectiveness than phenol. A coefficient of 1.0 would

indicate the same effectiveness as phenol; above 1.0 would be better in effectiveness than phenol. The coefficients of the oral antiseptics tested against Streptococcus faecalis are

Lavoris	none	Listerine	1.0
Pepsodent	0.4	Cepacol	4.0
Thymo-Borine	0.5	Bactine	30.0

I feel it correct to conclude that Bactine is by far the most effective oral antiseptic of those tested against Streptococcus faecalis. Since Bactine is so effective against Streptococcus faecalis, it is possible that it could be used as a prevention for Streptococcus throat.

CHARTS 1 - 7

CHART 1 Phenol 4%

	full	1-5	1-10	1-15
5 min.	-	+	+	+
10 min.	-	+	+	+
15 min.	-	-	+	+

CHART 2 Cepacol coef. 4.0

	full	1-5	1-10	1-15
5 min.	-	-	+	+
10 min.	-	-	-	+
15 min.	-	-	-	-

CHART 3 Bactine coef. 30.0

	1-70	1-80	1-90	1-95
5 min.	-	+	+	+
10 min.	-	+	+	+
15 min.	-	+	+	+

CHART 4 Lavoris coef. none

	Full	1-5	1-10	1-15
5 min.	+	+	+	+
10 min.	+	+	+	+
15 min.	+	+	+	+

CHART 5 Listerine coef. 1.0

	full	1-5	1-10	1-15
5 min.	-	+	+	+
10 min.	-	+	+	+
15 min.	-	+	+	+

CHART 6 Pepsodent coef. 0.4

	full	1-5	1-10	1-15
5 min.	+	+	+	+
10 min.	-	+	+	+
15 min.	-	+	+	+

CHART 7 Thymo-Borine coef. 0.5

	full	1-5	1-10	1-15
5 min.	-	+	+	+
10 min.	-	+	+	+
15 min.	-	+	+	+

\+ - Denotes growth
\- Denotes no growth

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HONORS AND AWARDS TO ACADEMY MEMBERS ---

Recent honors and awards to Wisconsin Academy members not previously listed include: JOSEPH BAIER, Phi Kappa Phi; PAUL W. BOUTWELL, Beloit College distinguished service citation; HARRY C. BROCKEL, tribute dinner by the World Affairs Council of Milwaukee; FARRINGTON DANIELS, Northeastern Section, American Chemical Society's annual $1,000 award for "excellence in teaching;" CONRAD A. ELVEHJEM, The American Institute of Baking Golden Loaf Award; JOHN GUY FOWLKES, "Distinguished Scholar" invitation to 50th Anniversary University of Georgia College of Education; WALTER FRAUTSCHI, "Wisconsin Alumnus of the Year;" LAURENCE F. GRABER, emeritus professor of agronomy; HOWARD T. GREENE, Wisconsin Alumni Club of Milwaukee "Distinguished Service Award;" ELLIS JENSEN, Phi Kappa Phi; SCOTT L. KITTSLEY, biographical sketch in The Amalgamator, publication of Milwaukee Section, ACS; J. MARTIN KLOTSCHE, Phi Kappa Phi and honorary membership in Phi Beta Kappa; WALTER J. KOHLER, Jr., portrait commissioned for hanging in Wisconsin Capitol executive office. (Continued on page 38)

PROGRESS REPORT
STATE COORDINATING COMMITTEE FOR HIGHER EDUCATION

The Coordinating Committee for Higher Education in Wisconsin has been busy. Since their establishment by an Act of the Legislature in October 1955, they have merged the faculties and programs for higher education in the State College, Milwaukee, and the University of Wisconsin-Milwaukee; developed a coordinated building program and integrated priority list for the University and the State Colleges; and developed a single, consolidated budget for these institutions which was presented to the Governor and the Joint Finance Committee of the Legislature. More recently their Joint Staff, special sub-committees and experts in educational and statistical fields have been making numerous reports on vital related subjects.

During the past year the Coordinating Committee also has issued two semi-annual reports to the Governor and Legislature. These contain much valuable data on higher education in Wisconsin and a projection of past experience into the future. Copies are available free from the committee by addressing them at 137 East, State Capitol, Madison, 2. The list of committee membership with this article is from their report of June 1957 presented by Chairman W. D. McINTYRE of Eau Claire.

This report, which keynotes higher education as "an investment in people--Wisconsin's most precious resource," explains that although not required by law, "the Committee took the position during its first year of work that the most effective long-range planning in public higher education in Wisconsin could not be done apart from a consideration of the development of private higher education programs and other phases of education beyond high school." With the cooperation of vocational schools, county teachers colleges and private institutions of higher education, the committee has assembled much factual information from which a set of "general planning principles"have been developed. Some of these significant facts are summarized as follows:

--By 1975 Wisconsin's population will have increased to 4,300,000--more than 600,000 over the 1955 figure.

--The number of high school graduates in the state in 1955 was double the number in 1930 and by 1965 they will be triple the number of 1930.

--Projections indicate that Wisconsin's higher education enrollments will jump from 54,082 in the fall of 1956 to 59,300 in 1960, to 71,900 in 1965 and to 88,400 in 1970.

--There is no undesirable duplication in educational programs offered by the University of Wisconsin and the State Colleges according to a report presented by EUGENE R. McPHEE, Secretary of the Board of Regents of State Colleges.

--The 35 most populous counties in the state furnish 83% of the Wisconsin student enrollment at the U. W. and State Colleges combined with 89% at the U.W. and 72% at the State Colleges separately.

MEMBERSHIP

Mr. Harold G. Andersen	Whitewater
Mr. Barney B. Barstow	Superior
Mr. Charles D. Gelatt, Vice-Chairman	La Crosse
Mr. Ellis E. Jensen	Janesville
Mr. Lewis C. Magnusen	Oshkosh
Mr. N. E. Masterson	Stevens Point
Mr. W. D. McIntyre, Chairman	Eau Claire
Mr. Eugene W. Murphy	La Crosse
Mr. Lee C. Rasey	Milwaukee
Mr. Wilbur N. Renk	Sun Prairie
Mr. Carl E. Steiger	Oshkosh
Mr. Robert E. Tracy	Janesville
Mr. George E. Watson	Madison
Mr. A. E. Wegner, Secretary	Madison
Mr. A. Matt. Werner	Sheboygan

The presidents of the University of Wisconsin Board of Regents and Wisconsin State College Board of Regents alternate annually as chairman and vice-chairman of the Coordinating Committee.

--Aggregate personal income in real terms is expected to increase 9% by 1960, 29% by 1965 and 47% by 1970 according to a U.W. School of Commerce Study titled, "Projections of Economic Activity for Selected Regions of the State of Wisconsin, 1957-1970."

--According to Professor DOUGLAS MARSHALL of the U. W. Dept. of Rural Sociology, Wisconsin can expect a 10% increase in its college-age population (18-21 years) in the next 10 years and these will number approximately 212,000 in 1960, 221,000 in 1965 and 229,000 in 1970.

--Total college and university enrollments in Wisconsin in the fall of 1957 were 49,698 with 66% in publicly controlled institutions and 34% in privately controlled institutions.

--About 42% of the freshmen entering the U. W. and the State Colleges were in the top quarter of their high school classes and almost a third of this top quarter in the state do not plan to go to college.

--While 16.5% of students attending Wisconsin colleges come from other states, 20.4% of Wisconsin's college-going youth attend institutions outside the state.

--Wisconsin leads all states in percentage of its high school students who graduate and in 1950 one out of five adults in the state had completed high school--one out of 20 had completed college.

In January, 1958, the Coordinating Committee gave its approval to a "Statement of General Planning Principles" for the future of publicly-supported higher education in Wisconsin. These principles are summarized briefly as follows:

1) The need for better and more education for all citizens is heightened by civilization's increasing complexity, scientific technological developments and the nation's enlarging role in world affairs.

2) Educational opportunities beyond high school should be provided as widely over the state as is educationally and financially sound.

3) Tuition or fees should not be used to control the size of enrollments--their ratio to the cost of education should continue to be low and scholarships, loan funds and work opportunities provided.

4) Educational programs should provide diversified types of higher education, strong counseling and guidance services, improved adult education classes and generally, educational opportunity of high quality. State Colleges should cooperate in adult education programs to the extent feasible without hurting regular institutions.

5) Organized research programs should continue to be concentrated at the University of Wisconsin but scholarly activity should be encouraged among faculty members in all disciplines in all publicly supported institutions. Also, basic research must be sharply accelerated in all fields including the humanities and social studies to determine effects on the individual and society of rapid technological changes.

6) The state will continue to need the valuable contributions made by Wisconsin's private institutions of higher education and continued citizen support is recommended for them.

(Material for this article compiled by Walter E. Scott from U. W. and Coordinating Committee news releases and their semi-annual reports).

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THE BOOKSHELF

FOUR COUNTY ECONOMIC BASE STUDY
By F. W. Altenburg

Northland College
Ashland, Wisconsin
1957 131 pp. $1.25

The counties of Ashland, Bayfield, Iron and Price are described separately under the headings of Topography, Water Resources, Forests, Soils, Agriculture, Economic Character, Facilities for Industry and Communities. The entire area is considered from the standpoint of its history, natural and human resources, economic character, and community or area facilities for industry.

THE INDIAN IN MODERN AMERICA
Ed. by David A. Baerreis

State Historical Society of Wis.
816 State st., Madison 6, Wis.
1957 $2.00

Two years ago a symposium on the subject of the modern Indian was held at the annual meeting of the State Historical Society of Wisconsin in Madison. The papers presented at that symposium form the basis for the Society's publication. They consider three aspects of contemporary Indian life: his complex legal status, an evaluation of his educational facilities and needs; and the social problems involved in his complete integration into modern living.

JONSON AND THE COMIC TRUTH
By John J. Enck

University of Wisconsin Press
Madison 6, Wisconsin
1957 $5.00

Brilliant insight has been given in this volume into the language, imagery, structure, characterization, costume, disguise, stage conventions and sources used by Ben Jonson in his Elizabethan dramas. Jonson's dramatic genius is revitalized by exploration of his plays--in detail and by tracing their ramifications. (From the Wisconsin Alumnus, December, 1957)

OF MEN AND MARSHES
By Paul L. Errington

Macmillan Company
60 - 5th ave.,New York 11, N.Y.
1957 150 ix pp. $4.50

Paul Errington needs no introduction to serious students of nature. The work and writings of the zoology professor at Iowa State College in wildlife ecology and management have won widespread recognition for originality, competence, and contribution to improved understanding of the relationships that exist between animals and their environments.

Perfectly blended in "Of Men and Marshes" are the knowledge, memories, impressions, and observations of a man who has been keenly interested in the animal life of marshes and other wetlands since early boyhood. It is an eloquent plea for better understanding of the role of marshes in our human environment. (From Outdoor News Bulletin, Wildlife Mgt. Inst., Dec. 6,1957)

SCOTTY'S MARE
By Robert Gard

Duell, Sloan and Pierce
124 E. 30th st., New York 16,N.Y.
1957 152 pp. $3.00

Mr. Gard, author of several books in the juvenile field, has published another book for children, this time about a horse. The book is further distinguished by illustrations drawn by Aaron Bohrod, UW artist in residence.

THE COMPUTING LABORATORY IN THE UNIVERSITY
Ed. by Preston C. Hammer

University of Wisconsin Press
Madison 6, Wisconsin
1957 236 pp. $6.50

In 1955 experts from many fields met at the U. W. for a conference on the computing laboratory and how it helps the university to meet the new problems of this age of automation. The present volume makes available to all persons interested in potentialities of machine computing or in setting up a modern numerical analysis laboratory, the talks presented at that conference. One section discusses the place of the laboratory in the university research program, another the applications of computing to specific fields, while another deals with the means of establishing a computing laboratory.

The book is informative for those who would understand modern high-speed computing techniques; useful for those who hope to organize a computing laboratory; and provocative for those who tend to philosophize over the role of science in the life of man.

GUIDE TO MANUSCRIPTS: SUPPLEMENT NO. 1
Ed. by Josephine L. Harper and Sharon C. Smith

State Historical Society of Wis.
816 State st., Madison 6, Wis.
1957 $5.00

This new Guide to the Manuscripts supplements the early Guide published in 1944 and includes all Society manuscript acquisitions from 1941 through May, 1956. It contains nearly 800 entries, with descriptive accounts of the major collections. Of special note are entries resulting from the Labor History project and the Medical History project. Fully detailed descriptions of collections are provided, entries are listed alphabetically and the volume is completely indexed.

A SYLLABUS OF UNITED STATES HISTORY
By William B. Hesseltine

University of Wisconsin Press
Madison 6, Wisconsin
1957 158 pp. $1.50

Revised and brought up to date, this syllabus is designed for use with any of the standard histories. The field of American history is divided into 77 topics for each of which is given a study outline and a list of references, including printed source materials of outstanding works of American history and products of recent scholarship and modern biographies. Recto pages blank for notes.

READINGS IN LINGUISTICS
Ed. by Martin Joos

Amer.Council of Learned Societies
345 E. 46th st., New York 17,N.Y.
1957 432 pp. Cloth, $8.00
Paper, $6.00

Contributed by 26 authors (the editor is represented by two articles) most of the 43 articles appeared in the journal of the Linguistic Society of America, Language. Linguistics as covered by this volume is a relatively new science largely of American development. According to Professor Joos, the United States during that period of 30 years (1925-1956) held the same commanding position in the development of this science which Germany occupied in chemistry in the 19th century. The whole world looks to the United

States as leader in the field. Just recently the University of Edinburgh has established a new department in its Graduate School of Applied Linguistics, and has summoned as visiting professors three contributors to this volume (in addition to the editor, Prof. Bernard Bloch of Yale Univ. and probably Prof. Archibald A. Hill of the Univ. of Texas). The field of the new school is especially the teaching of English as a foreign language and in order to supply sound theoretical linguistic foundation for their work, they have invited three Americans for three-week periods.

TEACHING ENGLISH GRAMMAR
By Robert C. Pooley

Appleton-Century-Crofts, Inc.
New York, N. Y.
1957 $2.50

"English grammar has a useful part to play in the training of young people to use their language effectively," the author explains. One purpose of the book is to clarify the confusions regarding the nature, use, and outcomes of grammar instruction. Another is to distinguish particular contributions which grammar may make to the education of young people. Two axioms of teaching English underlie all theory and practice as presented in the text: that students learn to write by the actual processes of writing, and that the reason for teaching English grammar is to improve written sentence structure.

THE JOURNALS OF WELCOME ARNOLD GREENE: JOURNEYS IN THE SOUTH, 1822-1824
Edited by Alice E. Smith

State Historical Society of Wis.
816 State st., Madison 6, Wis.
1957 $5.00

Where the volume of Green's journals published last year by the Society was concerned with sea voyages from 1816 to 1820, the present one contains the account of three separate journeys made subsequently to the southern part of the United States. He traveled by ship, by stage, by horseback, by steamboat, by wagon, and even by foot when necessary. His journeys took him to South Carolina, Georgia, Washington, D.C., up the Mississippi and Ohio rivers, along the Cumberland, and through Pennsylvania.

THE FRONTIER IN PERSPECTIVE
Ed. by Walker D. Wyman and Clifton B. Kroeber

University of Wisconsin Press
Madison 6, Wisconsin
1957 $5.50

Frontiers and their influences from ancient Rome to the modern world are brought into focus in this book by presentation of 13 essays. Each essay was written by a specialist in history, anthropology, classical or modern literature, and each covers part of a wide variety of frontier experiences, the movement of static or active societies, the intermingling of civilized and barbarian cultures, the influences of the frontier upon older societies, and the influences of the old upon the new society. The essays are then unified by Frederick Jackson Turner's famous essay on "the frontier." (From Wisconsin Alumnus, January 1958)

APPLETON POST-CRESCENT
Centennial and Futuristic Editions

Appleton Post-Crescent, Appleton
June 28, 1957, July 6, 1957
20¢ each, postpaid

To commemorate its 100th anniversary, Appleton staged a 10-day celebration, and the Post-Crescent published a 94-page Centennial Edition, followed a week later by a look into the future. What will their problems be in 1982, they asked state and local officials. One of the replies, from Lawrence College President Douglas M. Knight, appears in this issue of the Review (see p.16). Others concern schools, roads, supermarkets, industries, conservation, and so forth. Academy member Lillian Mackesey, staff

writer for the Post-Crescent, prepared the entire historical section from re-researching the history to lay-out. Both issues will be of interest to people of the entire Fox River valley.

MISCELLANEOUS BOOKS AND BOOKLETS

Recent publications by members of the Wisconsin Academy (at least one of the authors) include: "The Chemical Control of Aquatic Nuisances" by KENNETH M. MACKENTHUN (free from Committee on Water Pollution, State Board of Health, Madison); "Second Growth is Good," by BENSON H. PAUL (free from U.S. Forest Products Laboratory, Madison); "Wisconsin Produces and Markets Quality Milk" by C. D. CAPAROON, V. C. STRUCK and R. L. PACKARD (free from State Dept. of Agriculture, Madison); "A Guide to Prairie Chicken Management," by F. N. HAMERSTROM, Jr., OSWALD E. MATTSON and FRANCES HAMERSTROM (to be reviewed later) and "An Evaluation of Artificial Mallard Propagation in Wisconsin" by RICHARD A. HUNT, LAURENCE R. JAHN, RALPH C. HOPKINS and GEORGE H. AMELONG (both free from Conservation Dept., Madison); "How Wisconsin's Population is Changing" by DOUGLAS G. MARSHALL, "Selected Population Characteristics of Wisconsin Counties" by D. G. MARSHALL and NANCY MARFYAK, "Farm Male Replacement in Wisconsin, 1940-60" by DOUGLAS G. MARSHALL and GEORGE W. SLEDGE, and "Wisconsin--County and Economic Data, 1940-1954" by ALLAN D. ORMAN, NANCY MARFYAK and D. G. MARSHALL (all free from Dept. Rural Sociology, U.W. College of Agriculture, Madison); "Stevens Point Looks at Itself--An Economic Survey" and "Shawano Economic Development Survey" both by KENNETH E. RINDT (free from Bureau of Community Development, U.W. Extension Div., Room 3004 Stadium, Madison). Also, the September 1957 issue of The Wisconsin Archeologist, edited by Member ROBERT RITZENTHALER contained a 120-page article by JAMES SILVERBERG entitled "The Kickapoo Indians: First One Hundred Years of White Contact in Wisconsin."

Other publications of interest: "Geology and Ground Water Resources of Outagamie County, Wisconsin" by E. F. LEROUX, Geological Survey Water Supply Paper 1421 (Supt. Doc., Washington 25, D.C. for $1.00); "Industrial Zoning Principles and Practices" (free from Wis. Div. Industrial Development, State Capitol, Madison); "Economic Base Survey, Sturgeon Bay, Wisconsin" (Bureau Community Devel., U.W. Ext. Div., Room 3004 Stadium, Madison, for 50¢); "Wisconsin Forest Resources" by DONALD J. MACKIE and HARRY W. THORNE, "Wisconsin Forest Inventory" Publication Nos. 28, 29 and 30 on Forest Resources of Florence, Marinette and Oconto counties respectively (all free from Conservation Dept., Madison); "They Called the Land 'Ouisconsin'" by JAMES I. CLARK (Americana Press, 2105 Sherman ave., Madison, for 25¢); "Water" by LES WOERPEL (Wisconsin Federation of Conservation Clubs, 411 E. Lincoln ave., Stevens Point, for 10¢); "The Extension System of the University of Wisconsin" by L. H. ADOLFSON in April 1957 State Government (Council of State Governments, 1313 E. 60th st., Chicago 37, 50¢); "Corn" and "Corn Culture" by N. P. NEAL (free circulars from the U.W. College of Agriculture, Madison); "Guide to School Camping for Wisconsin" (free from Dept. Public Instruction, State Capitol, Madison); "The County Library Committee" (free from Wis. Free Library Commission, State Capitol, Madison); "Forest Resources of the Lake States Region" by R. N. CUNNINGHAM (Forest Resource Rpt. No. 1, 30¢ from Supt. Doc., Washington, 25, D.C.); "The Market for Domestic Charcoal in Wisconsin" by JOHN R. WARNER and WILLIAM B. LORD and 1956 Annual Report with important Wisconsin information (free from Lake States Forest Expt. Station, St.Paul, Minn.);

"The 8th Sea" about the Great Lakes Waterway--a 16-p. reprint from Traffic World (815 Washington Bldg., Washington 5, D.C. for 25¢); Chart No. 726 of Lake Winnebago including Fox River down to De Pere, 36"x48" (from U.S. Lake Survey, Corps of Engineers, 630 Federal Bldg., Detroit 26, Mich. for 75¢); "Creation of a Campus" by MARGUERITE ELLEN SCHUMANN (Lawrence College Press, Appleton, $3.00); "The Lower Fox...A River of Paper" by JOHN H. AINSWORTH (Thilmany Pulp and Paper Co., Kaukauna) and "To Have Seen a Century" by ORANGE A. SMALLY and HAROLD F. WILLIAMSON (Northwestern Mutual Life Insurance Co., Milwaukee).

Recent books by Wisconsin authors or of state interest include: "The Wisconsin Story" by H. RUSSELL AUSTIN (a revised edition with 100 more pages and 68 more illustrations issued by The Milwaukee Journal, Milwaukee, for $3.75 as part of their 75th Anniversary Celebration); "Gallery of Wisconsin Art" (by the Milwaukee Journal for 85¢); "The Fight for Fluoridation" by DONALD R. McNEIL (Oxford U. Press, $5.00); "Let There Be Light: The Electric Utility Industry in Wisconsin, 1881-1955" by FORREST McDONALD (American History Research Center, 816 State st., Madison for $6.00); "Guide to Wisconsin Newspapers, 1833-1957" by DONALD E. OEHLERTS (State Historical Society, Madison, $8.00); "The Dark Missouri" by HENRY C. HART (Univ. Wis. Press, Madison, $6.00); "The Censorship of Books" by DAVID FELLMAN (Univ. Wis. Press, 75¢); "The Boundaries of the Campus" - a history of the U.W. Ext. Div., 1885-1945 (Univ. Wis. Press, 430 Sterling Ct., Madison $3.50); "American Government" by JAMES McCAMY (Harpers at $6.50); "Research in Education" by U.W. Professor A. S. BARR (booklet of lectures available free from Southern Illinois University Press) and "Wood - Colors and Kinds", Agr. Handbook 101 by the U. S. Forest Products Laboratory at Madison (50¢ from Supt. Doc., Washington 25, D.C.) described as "the first publication ever to attempt a comprehensive non-technical presentation identifying the different kinds of wood and the first to publish technically accurate full-color photographs of so many representative U. S. woods."

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Honors and Awards (continued from page 31)

Dr. WILLIAM S. MIDDLETON, Veteran Administration's top "Service Award" and honorary degree of Doctor of Humane Letters from Franklin and Marshall College; M. STARR NICHOLS, emeritus status at State Laboratory of Hygiene; RALPH A. McCANSE, recognition banquet for a quarter century of service in UW Extension Division; MENAHEM MANSOOR, selected as one of International six scholars to help translate, transcribe and edit the Dead Sea Scrolls; HUGO ROHDE, selected as honorary chairman of the Milwaukee Section's ACS Golden Jubilee Committee and portrait featured on front cover of their January 1958 Amalgamator; Mrs. E.J.B. SCHUBRING, honored by the Madison Chapter of American Red Cross for significant service; WALTER R. SYLVESTER (posthumously), Award of Merit by the American Association for Conservation Education and memorial conservation library established by Alpha Kappa Lambda, Wis. State College (Stevens Point) conservation fraternity; GEORGE URDANG, named Emeritus Director of the American Institute of the History of Pharmacy and his portrait, commissioned by Parke, Davis & Co., was unveiled at honorary banquet; HELEN C. WHITE, honored by National Association of University Women.

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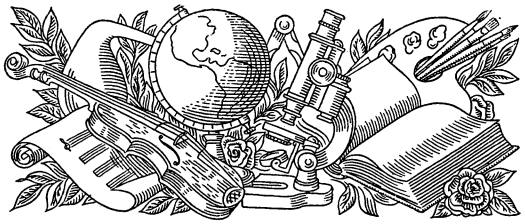
CHECK YOUR CALENDAR FOR THE NEXT ANNUAL MEETING AT WHITEWATER, SATURDAY, MAY 3, 1958
FEATURING THE KETTLE MORAINE AREA

W.C.D. TECHNICAL LIBRARY



STATE AND ACADEMY NEWS

Golden Anniversary

WISCONSIN SECTION—AMERICAN CHEMICAL SOCIETY

On September 25, 1957, nearly 100 members of the American Chemical Society's Wisconsin Section gathered for a dinner at the U.W. Memorial Union to celebrate their 50th anniversary. Honored at the banquet was HUGO W. ROHDE of Oconomowoc, one of three living charter members. The other two are E. V. McCOLLUM of Baltimore and HAROLD C. BRADLEY of Berkeley, former U. W. professor of physiological chemistry.

Prof. A. J. IHDE of the U.W. chemistry department recalled that in 1907 only 56 ACS members claimed Wisconsin as their home state. Now in the Wisconsin section alone, which excludes the Milwaukee, Fox River Valley and Superior-Duluth regions, there are 450 active members, 350 of them from the Madison area. The national organization has more than 77,000 members.

Prof. V. W. MELOCHE, U.W. chemist, related the growth of chemistry in the University and A. W. SCHORGER, emeritus professor of wildlife, gave his personalized recollection of the expansion of industrial chemistry in Madison. The present chairman of the Wisconsin section is Prof. HAROLD F. DEUTSCH, U.W. Medical School.

HUGO W. ROHDE also has been affiliated with the Wisconsin Academy since 1898, the longest of any living member. HAROLD C. BRADLEY belongs to the "50 Year Club," having been a member since 1908.

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REPORT ON THE STATE COLLEGES

Re-elected officers of the State College Regents are President WILLIAM D. McINTYRE, Vice-Pres. LEWIS C. MAGNUSEN and Secretary EUGENE R. McPHEE. . . . There were 6,408 students in State College summer schools last year with 974 at Oshkosh, 923 at Stevens Point, 869 at Eau Claire and 815 at Whitewater. Of these, 315 students took graduate work and 55 Masters degrees were granted. ... Plans for an $11.4 million building program have been prepared and 28 new buildings are going up at present on nine campuses. . . . President CHARLES O. NEWLUN of Platteville State College has announced his retirement this Spring. ...There are now 17,325 students on State College Campuses and in 118 Extension Centers. On campus students at the top four are 1,573 at La Crosse, 1,552 at Oshkosh, 1,417 at Eau Claire and 1,407 at Whitewater. ... News of Wisconsin's ten State Colleges is distributed in a State College Report which this year also will go to 25,000 Wisconsin high school seniors with a total readership of 65,000 for each of the four issues annually.

NEWS NOTES FROM MARQUETTE UNIVERSITY

(Collected with assistance of Prof. SCOTT L. KITTSLEY, Review Reporter)

A multi-million dollar construction and faculty development program was recently announced in a self-analysis bulletin, "Great Teaching in a Dynamic Decade" including more than 15 buildings, additional land acquisition, scholarships and fellowships, library expansion and faculty improvement. Included in the buildings are two science halls and classrooms. New biology and communications buildings also are planned. ... Doctoral degree programs again are being offered in the fields of philosophy, botany, zoology, anatomy, biochemistry, microbiology, pathology, pharmacology and physiology. ... A research program on the use of radioactive isotopes as a measuring device in studying wax formulation and film strength is being financed by S. C. Johnson & Co. and Professor JOHN G. SURAK is director of the radio-chemical phase of the project. ... Prof. ARTHUR BARKOW'S National Science Foundation grant has been renewed to continue his research on "Elementary Particle Reactions" particularly in cosmic rays. ... The U.S. Public Health Service has granted a quarter million dollars for a biological research building and additional funds to assist in purchasing equipment. ... Father JOHN P. O'BRIEN has received a $14,000 grant from the U.S. Atomic Energy Commission for his research in biological effects of irradiation of circulating blood. ... U.W. Prof. JOHN MARGRAVE was the first speaker at the "Horizons in Chemistry" series this year. ... Equipment for experimental teaching through the use of closed circuit television has been secured.

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NEWS NOTES FROM THE MILWAUKEE PUBLIC MUSEUM

(Collected with assistance of ALBERT M. FULLER)

SAMUEL A. BARRETT, a former president of the Wisconsin Academy (1927-29) and Director of the Milwaukee Public Museum for 19 years, spent two weeks in November at the Museum in connection with his project on the production and use of anthropological motion pictures. He is making a survey of documentary films which show primitive peoples engaged in primitive activities. His project is sponsored by the Dept. of Anthropology of the University of California. He hopes to secure the financial backing of a Foundation which will make it possible to collect copies of documentary films and to put men in the field to obtain additional motion picture films of primitive peoples. He is living in Berkeley, and has been actively engaged in anthropological work ever since his retirement from the Museum in 1939. ... OWEN J. GROMME, Curator of Birds and Mammals, served as leader of an expedition to the Chugach and Talkeetna mountains of Alaska in August and September to collect the necessary materials to construct a habitat group of Dall sheep. In all, eight sheep and the necessary foreground material were collected. The expedition was sponsored by ARTHUR MacARTHUR and ROBERT TRACY of Janesville. ... The 75th Anniversary Series of public lectures is now in progress. ... An excellent new "Souvenir Guide" of 112 pages contains 130 illustrations of exhibits and is available by mail for 30¢ per copy. ... The first showing of MURL DEUSING'S new movie, "Panama, Land of Contrasts" was held last fall.

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NEWS NOTES FROM THE STATE HISTORICAL SOCIETY

According to the Proceedings published in its 111th year, members of the Wisconsin Academy continue to be active leaders in the State Historical Society. WILL C. McKERN, an Academy past-

president, is their First Vice-president and six others are on their Board of Curators: WALTER FRAUTSCHI, Mrs. ROBERT FRIEND, WILLIAM B. HESSELTINE, WILLIAM LAMERS, GUIDO RAHR and MARVIN B. ROSENBERRY. ... The Society is continuing its $1.00 special membership plan for another year. ... DON McNEIL has been Acting Director this past year while Director CLIFFORD LORD completed an assignment to write the Society's history. ... The Society's excellent Wisconsin Magazine of History publicizes their purpose on the back cover: "To promote a wider appreciation of the American heritage with particular emphasis on the collection, advancement, and dissemination of knowledge of the history of Wisconsin and of the Middle West."

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NEWS NOTES FROM THE UNIVERSITY OF WISCONSIN

(Collected with assistance of ROBERT TAYLOR, UW News Service, PETER J. SALAMUN, UW-Milwaukee and J.F.VOZZA, Racine Extension Center)

The University will provide intensive training in mathematics subject matter to 50 high school and college teachers under a 1958 summer institute, supported by the National Science Foundation. (Under the same program, Marquette University will train high school biology teachers, and Ripon College will instruct high school teachers of physics, mathematics, and general science). ... Establishment of a Faculty Memorial Fellowship Fund to honor UW faculty members on their death or retirement has been approved by the University faculty. ... The 23rd Wisconsin Salon of Art attracted more than 400 entries, and 101 works were exhibited in the main gallery of the UW Memorial Union during late November and December. ... The Wisconsin Idea in action is portrayed in a new documentary color film, "University of the People," produced by UW Extension Division to depict its role in supplying the educational needs of Wisconsin citizens of all ages and from all walks of life.

Observance of the 75th anniversary of the UW School of Pharmacy opened with the 1957 Wisconsin Pharmacy Institute on the campus, Oct. 30-Nov. 2. A pioneer in pharmacy training, the University today has the largest graduate department in pharmacy in North America. ... Eleven Wisconsin-trained geophysicists are engaged in field operations of the International Geophysical Year. GEORGE P. WOOLLARD, who heads UW geophysics study, is chairman of the IGY gravity program. ... Botany and zoology departments have started using a $1,850,000 addition to Birge Hall. The new wing--the first expansion of physical facilities in 45 years for the two departments--has 83,000 square feet of space on 10 floors. ... The University ranks first among American universities in number of Ph.D. degrees granted during 1955-56, according to the Association of Research Libraries. This is the third year Wisconsin has held the top spot on this unofficial academic honor roll.

UW dairy researchers have announced development of a process for making milk and cream sterile to allow it to be kept for a period without refrigeration, and concentrated to save shipping costs. The UW is seeking public patents on the process that is expected to aid in distributing Wisconsin milk to many interstate dairy markets that now shut out the state's fresh milk and cream. ...The new year brings a new research observatory near Pine Bluff for the UW astronomy department. A $200,000 gift from the Wisconsin Alumni Research Foundation supported the 1957 construction of the observatory and a new 36-inch reflecting telescope. The hilltop site is located 15 miles west of Madison. ... A project

supported by a $104,000 recent grant from the Fund for the Advancement of Education to the School of Education and the Extension Division is testing the effectiveness of films in teaching physics. More than 2,500 students in 106 high schools of the state are taking part in the project. ... A total of 22,424 students, one of the largest UW registrations in history, was enrolled in the fall semester; 16,234 were on the Madison campus; 4,735 at UW-Milw.; and 1,455 at the eight Extension Centers around the state. Only twice before, in the post war years of G.I. educational benefits, has this total been exceeded.

Artist-in-Residence AARON BOHROD recently showed 22 paintings at the Milch Galleries in New York City. ... Professor EDWIN M. LARSEN has been selected as one of the 30 "Visiting Scientists in Chemistry" who will participate in a program contacting small colleges to interest students in science careers under National Science Foundation support. ... A new credit correspondence course in Hebrew which was written and will be taught by Professor MENAHEM MANSOOR, Chairman of the Dept. of Hebrew and Semitic Studies, is available through the Extension Division. Professor MANSOOR is an authority on the Dead Sea Scrolls and recently was the key figure in assembling the first scholarly research report made initially by radio through tape recordings from experts throughout the world and original interpretation on these important documents.

Professor LeROY PETERSON has been appointed as Milwaukee area coordinator for the Extension Division. ... The Wisconsin Alumni Research Foundation has announced that it has turned over to the UW 18 million dollars in the last 32 years--14 of these from the HARRY STEENBOCK patent. ... School and Society magazine has reported that Wisconsin is the 8th largest State University in the nation. ... HENRY J. DUWE, Acting Director of Extension, reported 7,167 adults entered extension classrooms last semester in 233 courses throughout the state. ... President E. B. FRED plans to retire at the close of the 1957-58 school year after 44 years of University service. A committee of the Board of Regents, including Wisconsin Academy members ELLIS E. JENSEN and CARL STEIGER, are selecting a successor. They are assisted by a faculty committee including Academy members JOSEPH G. BAIER, CONRAD A. ELVEHJEM, MARK H. INGRAHAM and GERARD ROHLICH.

RUTH WALKER was on leave from the UW-M Botany Dept. during the first semester to do research at the University of California. ... ALVIN THRONE recently made extensive collections throughout the state of insects belonging to the order Neuroptera. He is interested in contacting any person having a collection of these insects from Wisconsin. ... PETER SALAMUN spent part of the past summer collecting and studying the distribution of members of the Honeysuckle Family. ... Plans are being formulated for the new science building on the UW-M campus. Members of the building committee are JAMES ANTHONY (Zoology), ERNEST BELLIS (Chemistry), RAY BRUMBLAY (Chemistry), Vice-Chairman, GEORGE ELMERGREEN (Engineering), HARRY MADISON (Psychology), Secretary, MANFRED OLSON (Physics), ALTON ROUSE (Physics), ALVIN THRONE (Botany), JACK TROVER (Building and Grounds), HARVEY UBER (Geography), ELDON WARNER (Zoology) and PHILIP WHITFORD (Botany), Chairman. ... FRED TIETZE (English) resigned from the faculty of the UW Extension Division in Racine to accept a position as Assistant Professor of English at Southern Illinois University in Carbondale, Illinois.

The Milwaukee School of Engineering is conducting a development fund drive for $1,150,000 and as of last December had raised over $300,000. ... Milton College has established a credit course in Public Relations under Professor HERBERT CROUCH. The school increased its enrollment by 10% last semester to 310 students.

REPORT FROM THE SECRETARY

By Francis D. Hole
Secretary-Treasurer

The Council of the Academy held its autumn meeting on Saturday, September 21, 1957 at the Brooks Memorial Union, Marquette University, in Milwaukee. After a fine dinner, the Council moved to a pleasant conference room, where Rev. Raymond H. Reis, S.J., President, called the meeting to order at 1:30 p.m. The following items of business were considered:

1. Report of the Editor of the Academy Review, Mr. Scott. An unusual number of favorable comments have been received concerning this publication, recently.
2. Report of the Academy Librarian, Mr. Scott.
3. Report of the Program Committee, Mrs. Nelson, Chairman.
4. The text for first call for papers was reviewed and approved.
5. A constitutional amendment, prepared by Mr. Schuette, to permit the naming of a president-elect a year in advance, was reviewed and approved.
6. Financial report, Mr. Hole. A proposal was made by the Council that dues be raised by January 1959, one dollar, in view of the increasing cost of printing the five pieces of printed matter which members now receive annually for $3.00.
7. The idea of making awards for artistic and literary accomplishments was considered a good one. Sources of funds for this purpose are to be sought.
8. A gift of $0.45 from RAY W. STUBBE was accepted.
9. The following 14 applicants for membership were accepted:

JOHN C. PARMER, Chicago	Mrs. MONICA BAYLEY, Milwaukee
ROBERT McMILLEN, Neenah	KENNETH E. MILLER, West Allis
EDWARD P. DURKIN, Madison	KERMIT C. BERGER, Madison
ROBERT H. SCHACHT, Madison	HARRY C. BROCKEL, Milwaukee
RUSSELL W. FOWLER, Madison	ALPHONSE J. PIERRE, Oconto
Mrs. FERN FOWLER, Madison	Mrs. GRACE M. JOHNSON, Viola
HENRY J. DUWE, Madison	JEROME H. FISCHER, Milwaukee

10. Report on the TRANSACTIONS of the Academy, by the Editor, Mr. Larsen.
11. The Council Meeting was adjourned at 4:30, to meet again January 25, 1958, at Madison.

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Further Academy News

After the recent resignation of Vice-President (Letters) WILLIAM E. SIEKER, President RAYMOND H. REIS appointed Professor HENRY MEYER of Whitewater State College to complete his unexpired term subject to Council approval. ... TRANSACTIONS Editor JAMES A. LARSEN reports that Vol. 46 (1957) is at the printers and should be available for distribution next month. ... Apologies to CYRIL KABAT, Research Coordinator for the Wisconsin Conservation Dept. at Madison, for inadvertently omitting his name from the Academy Directory last issue. ... Miss LAUREL NELSON, Exchange Librarian at the UW Memorial Library, now is handling all Academy library functions at that institution which houses the Academy library under a cooperative arrangement. ... Membership chairman HAROLD GODER has conducted an intensive campaign during the past month to secure new members. A bonus of the 1957 issue of the TRANSACTIONS and the Directory issue of the Review was awarded to each new member joining before December 31, 1957. Names and locations of those who took advantage of the offer appear on the next page.

New Members

Life: WALTER J. KOHLER, Kohler

Sustaining: WALTER A. HENZE, Iron Mountain, Mich.
I. W. MOYLE, Big Bend
HAMILTON A. PINKALLA, Milwaukee
MILO C. RICHTER, Wauwatosa

Family: GEORGE and MARY CAREY, Beloit
Mr. and Mrs. HENRY H. GOULD, Janesville
Mr. and Mrs. BENJ. G. LEIGHTON, Baraboo
LLOYD and SYLVIA W. LIEDTKE, Whitewater
RUDOLPH and BENA MANRIQUEZ, Milwaukee
THOMAS and VIRGINIA D. MITCHELL, Milwaukee
EMILY H. PINKALLA (Mrs. Hamilton), Milwaukee
ARTHUR E. and ADA L. SYLVESTER, Milwaukee

Active:

GEORGE S. BACHAY, Edgerton
GEORGE H. BECKER, Kenosha
SHELDON BERNSTEIN, Milwaukee
WILLIAM W. BIDDLE, Madison
WALTER T. BJORAKER, Madison
L. G. BLOMGREN, Madison
ERIC A. BOURDO,Jr., L'Anse,Mich.
LOUIS G. BRECHLER, Madison
HELEN S. BRINSMADE (Mrs. R.B.), Madison
BUREL S. BUTMAN, Green Bay
FRANCIS E. CHAPMAN, Racine
JACK A. CLARKE, Madison
C. R. CLAUSSEN, Rib Lake
WILLIAM S. COGHILL, Mosinee
Mrs. CATHERINE G. COLLINS, Thiensv.
CARRIE CROPLEY, Kenosha
THOMAS R. DALE, Shorewood
ANDREW DAWES, Milwaukee
RALPH J. ELKINGTON, Rhinelander
ROBERT D. ESPESETH, Madison
J. HARWOOD EVANS, Janesville
DOROTHY EYKE, Milwaukee
MAXWELL M. FREEMAN, Milwaukee
RAYMOND E. GARRETT, Newberry,Mich.
GLENN D. GARVEY, La Crosse
ARTHUR F. GIERE, Galesville
LELAND W. GILLESPIE, Green Bay
GILSON G. GLASIER, Madison
Msgr. EDMUND J. GOEBEL, Milwaukee
MAURICE HENNESSY, Superior
HAROLD H. HULL, Madison
E. S. HURD, Rhinelander
ROBERT J. HYNEK, West Allis
RALPH D. JENKINS, Bruce
ROBERT K. JOHNSON, Milwaukee
PAUL W. KEHRES, Milwaukee
Sr.M.ORESTES KOLBECK,Manitowoc
BERNHARD C. KORN, Milwaukee
Mrs. HAZEL L. KUEHN, Madison
PHILIP R. LARSON, Rhinelander
HELEN A. LEISER, Milwaukee
JAMES R. LOVE, Madison
WALLACE N. MacBRIAR,Jr., Milw.
LUELLA L. MEINKE, Westfield
EDWARD G. MEITER, Milwaukee
ETTA J. MOHR (Mrs. John A.Sr.), Green Bay
HARRY NOHR, Mineral Point
MARY JANE OESTMANN, Columbus,O.
FREDERICK I. OLSON, Milwaukee
HENRY OTTERSON, Kenosha
ROBERT V. OSBORNE, Racine
F. A. PALL, Cudahy
Mrs. E. MARGARET PARKER,Eagle R.
ROBERT R. POLK, Oshkosh
JOHN O. POLZER, Milwaukee
DIMITZI PZONIN, Madison
EMIL RAUCHENSTEIN, Madison
Mrs. R.K. RICHARDSON, Beloit
A. J. RIKER, Madison
BERNARD ROLL, Milwaukee
JOSEPH RUBATT, Milwaukee
Mrs. FRANCES E. RUDERT, Milw.
LAURA A. SCHUH, La Crosse
GWEN M. SCHULTZ, Madison
Mrs. LYDA L. SCHULTZ, Ripon
EDGAR G. SCHWARZ, Milwaukee
E. J. SPENCER, Madison
PERRY J. STEARNS, Milwaukee
J. VERNON STEINLE, Racine
EDGAR W. TRECKER,Jr., Elm Grove
ETHEL A. TRENARY, Madison
Mrs. ALAN J. TURNBULL, Racine
VERNON E. vanPATTER, Superior
Sr.M.GERALD VODDE, Fond du Lac
C. L. WACHTEL, Wauwatosa
PAUL J. WAITE, Madison
EVERT WALLENFELDT, Madison
A. VINCENT WEBER, La Crosse
RAY WEBER, Antigo
THOMAS WERNER, Beloit
ROBERT C. WEST, Madison
EDWARD L. WHITE, Ft. Atkinson
THEODORE R. WIESEMAN, Milwaukee
F. E. J. WILDE, Milwaukee
JESSE N. WILLIAMS,Jr., Madison
JOHN W. WINN, Madison
Sr.M.FRANCIS XAVIER, Milwaukee

Library: Of W. A. HENZE, Iron Mountain, Mich.

In Memoriam

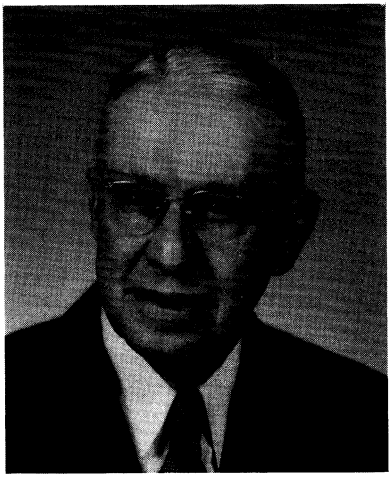
Arlow B. Stout

1876-1957

ARLOW BURDETTE STOUT died at his home in Pleasantville, N.Y. on October 13, 1957. Born in Ohio in 1876, he soon moved to Albion, Wis. with his parents, where he grew to manhood. He attended public schools, Albion Academy and Milton College and graduated from Whitewater State Normal School in 1903. For four years he taught science at Baraboo High School and in 1907 began studying at the University of Wisconsin. Obtaining the B. A. degree in botany in 1909, he was selected for membership in Phi Beta Kappa and elected to Sigma Xi the next year. He taught at the University until 1911 when he joined the staff of the New York Botanical Garden, continuing his association with Professor R. A. Harper, who had become Head of the Dept. of Botany at Columbia University. In 1913, he was granted the Ph.D. degree at Columbia.

Serving as Director of Laboratories at the Botanical Garden until 1938, he then became Curator of Education and Laboratories and in 1948 retired from active duties. His main technical research was concerned with experimental studies on the nature and genetics of intraspecific self- and cross-incompatibilities in the sexual reproduction of flowering plants. The papers and monographs he published present much new data on this subject and also on the processes of unilateral hybridization. In horticultural circles Dr. Stout was widely known for the results of two projects of research in applied plant breeding--one in the development by hybridization and selective breeding of many new types of Hemerocallis and the other in the development of seedless grapes sufficiently hardy for culture in New York State, the latter in cooperation with the New York State Agricultural Experiment Station. During 1924-31, he planned and directed extensive projects of hybridization of species of Populus under the auspices of the Oxford Paper Company, a work being continued by the U. S. Forest Service.

Dr. Stout was the author of more than 350 publications and lectured extensively on Hemerocallis throughout the country, as well as presenting popular lectures at the Botanical Garden. He was the recipient of numerous awards, and the American Hemerocallis Society established a Stout Medal as the highest honor that is voted each year for a clone of Hemerocallis. He was granted honorary life memberships in the Royal Horticultural Society of Great Britain, the Wis. Archeological Society, the Ohio Historical and Archeological Society and the Horticultural Societies of New York and Pennsylvania. He was a member of the AAAS, the Botanical Society of America, the Torrey Botanical Club, the N. Y. Academy of Sciences, the American Society of Naturalists, Genetics Society of America, American Society for Horticultural Science and American Hemerocallis Society. He was affiliated with the Wisconsin Academy since 1907, becoming a Life Member in 1949. --From materials prepared by Dr. Stout in 1956, supplied through the courtesy of the New York Botanical Garden.



In Memoriam

William N. Smith

1877-1957

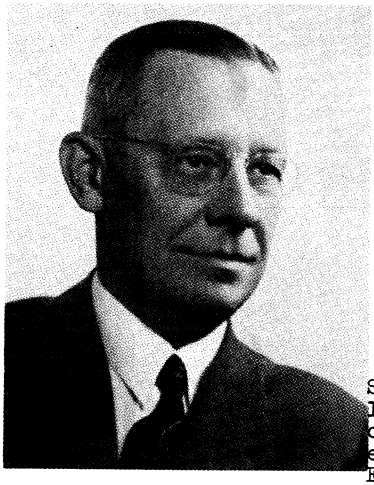
WILLIAM NOBLE SMITH was born May 18, 1877 at Cresco, Iowa, and died at Platteville, Wisconsin on March 28, 1957. He attended both the University of Iowa and the University of Wisconsin, receiving the B.A. degree from the latter institution in 1897. Three years later he graduated from the U. W. Law School.

For some years prior to 1904, Smith was secretary to Charles R. Van Hise, who became President of the University of Wisconsin in 1903. He was General Manager of the newly incorporated Vinegar Hill Zinc Company of Platteville from its organization in 1906, later becoming Vice-President of the Company, which prospected for and developed the zinc-lead mines and mills in the Upper Mississippi Valley district. From 1912 to about 1933 he was active in the exploration and development of important zinc-lead mines in the Oklahoma-Kansas district. In 1925 he and his associates organized the Ozark Chemical Company of Tulsa, Oklahoma for production of sulphuric acid. The Mahoning Mining Company (in the Illinois-Kentucky Flurospar district) was organized in 1934, and a large flotation processing mill built at Rosiclare, Ill. Since zinc and lead were intermingled in the crude ore it was necessary to work out a process by which a clean separation could be made, and in cooperation with the U.S. Bureau of Mines this problem was solved for the first time. In 1948 Ozark Chemical and Mahoning were consolidated into the Ozark-Mahoning Co. and Mr. Smith was President and Chairman until his retirement in 1954.

He was a regent of the Wisconsin Institute of Technology from 1917-26, a director of the American Zinc Institute from 1920-45, served on the Platteville Park Board from 1934-55, was a member of the American Institute of Mining, Metallurgical and Petroleum Engineers, and joined the Wisconsin Academy in 1942.

A long-time associate comments: "His inherent love for geology and exploration seemed to combine with his engineering and legal talents to produce a business executive of a high order. He had an unusually orderly mind and loved to plan, work and create things. Whether it was a ... Playgrounds Park, Mine or Chemical Operation, he built from a solid foundation of engineering." He gave much time and interest to public projects, especially the recreation facilities, and the City Council of Platteville early in 1957 named the Camp Grounds and Swimming Pool Parks in his honor, recognizing his many contributions.

(Prepared from material supplied by E. J. Sawbridge, Platteville)



In Memoriam

Joseph C. Ford

1889-1956

JOSEPH C. FORD was born in Scottdale, Pennsylvania on May 21, 1889 and died at Madison, Wisconsin on October 19, 1956. Trained as an engineer, he was with the General Electric Company until 1914 when he came to Madison as assistant manager and secretary of the Ray-O-Vac Company. He was a founder of the Celon Company of Madison and its president since 1926. Not only was he widely known in his business life but he held as well positions of dignity and honor in the community through his many philanthropic endeavors. He had become a Life member of the Wisconsin Academy in 1943.

(From "Who's Who in America" and the Celon Co.)

In Memoriam - Edward D. Reynolds 1888-1956

EDWARD DANIEL REYNOLDS, for many years a member of the faculty of the Department of Education in Hunter College of the City of New York, died on March 26, 1956. He was born at Cottage Grove, Wisconsin on July 8, 1888.

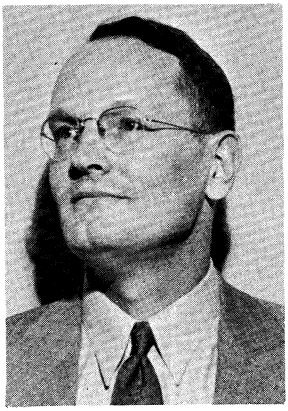
Reynolds earned his B.A. at the University of Wisconsin in 1913 and was awarded an M.A. by Harvard University in 1917. After teaching for eight years, he earned a second M.A. in Education at Teachers College of Columbia University. Subsequently, he took courses leading to the doctorate at Yale University, and also studied at other institutions over a period of years. From 1925 to 1934 he was a member of the staff of the Tutoring School of New York, being in charge of the work in English and History. In 1938 he began to teach at Hunter College, giving courses in the Philosophy of Education, the History of Education and Comparative Education, but did not hold a full-time appointment. His memberships in learned societies included several in educational and social science fields. He joined the Wisconsin Academy in 1954.

Reynolds was deeply interested in the farm he maintained in Wisconsin, and this occupied a good part of his time and no doubt prevented him from devoting his energies as fully to education as might otherwise have been the case. He was, however, greatly respected as a teacher and a courteous colleague. (Prepared from material supplied by the President's Office, Hunter College of the City of New York.)

In Memoriam

Hugh D. Ingersoll

1915-1957



HUGH DAVID INGERSOLL was born at Madison, Wisconsin on September 24, 1915. He attended the local schools and obtained a B.A. from the University of Wisconsin, and an M.A. in public administration from Syracuse University.

He did some work at city hall in Madison before going to Washington in 1939, where he was associated with the state and local governments division of the Bureau of Census until 1942. After serving in World War II, he became a research aid with the Wisconsin Taxpayers Alliance and an instructor in political science at the University of Wisconsin. For five years he was a budget officer with the Veteran's Administration office in Milwaukee and acted as program chairman of the Milwaukee chapter of the American Society for Public Administration. In 1952, he was named to the position of financial administrative assistant to the Mayor of Madison.

Mr. Ingersoll was a member of the American Society for Public Administration, the National Municipal League, the American Federation of State, County and Municipal Employes, the Air Force Assn., Madison Public Relations Club, and the Wisconsin Academy.

Wherever he served, and in whatever capacity, he left his own memorial, in terms of a contribution of permanent worth and value. -- (Prepared by Assistant Editor.)

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ACKNOWLEDGMENTS--

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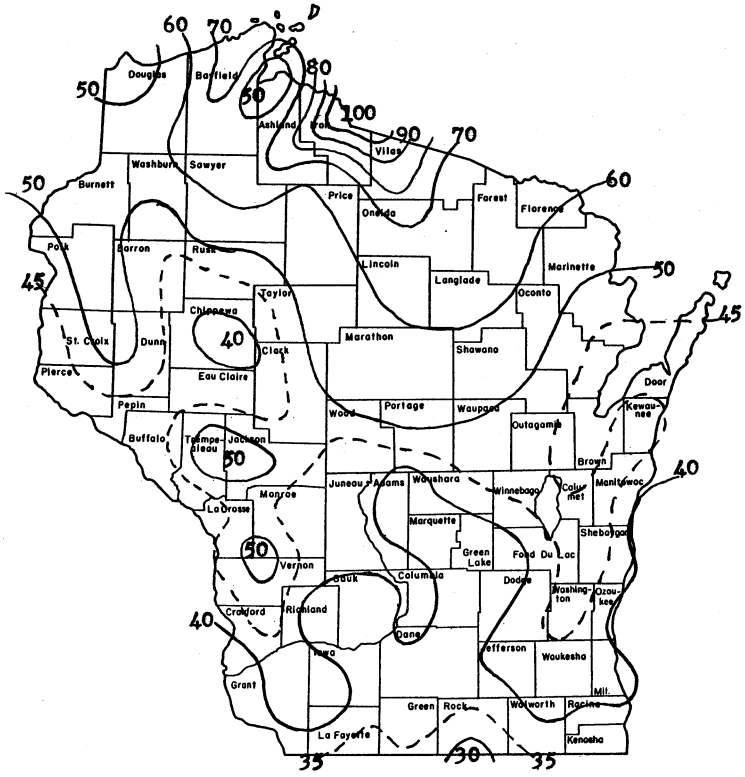

Map prepared by Professor PAUL J. WAITE, State Climatologist

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