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THE WISCONSIN ALUMNI MAGAZINE.

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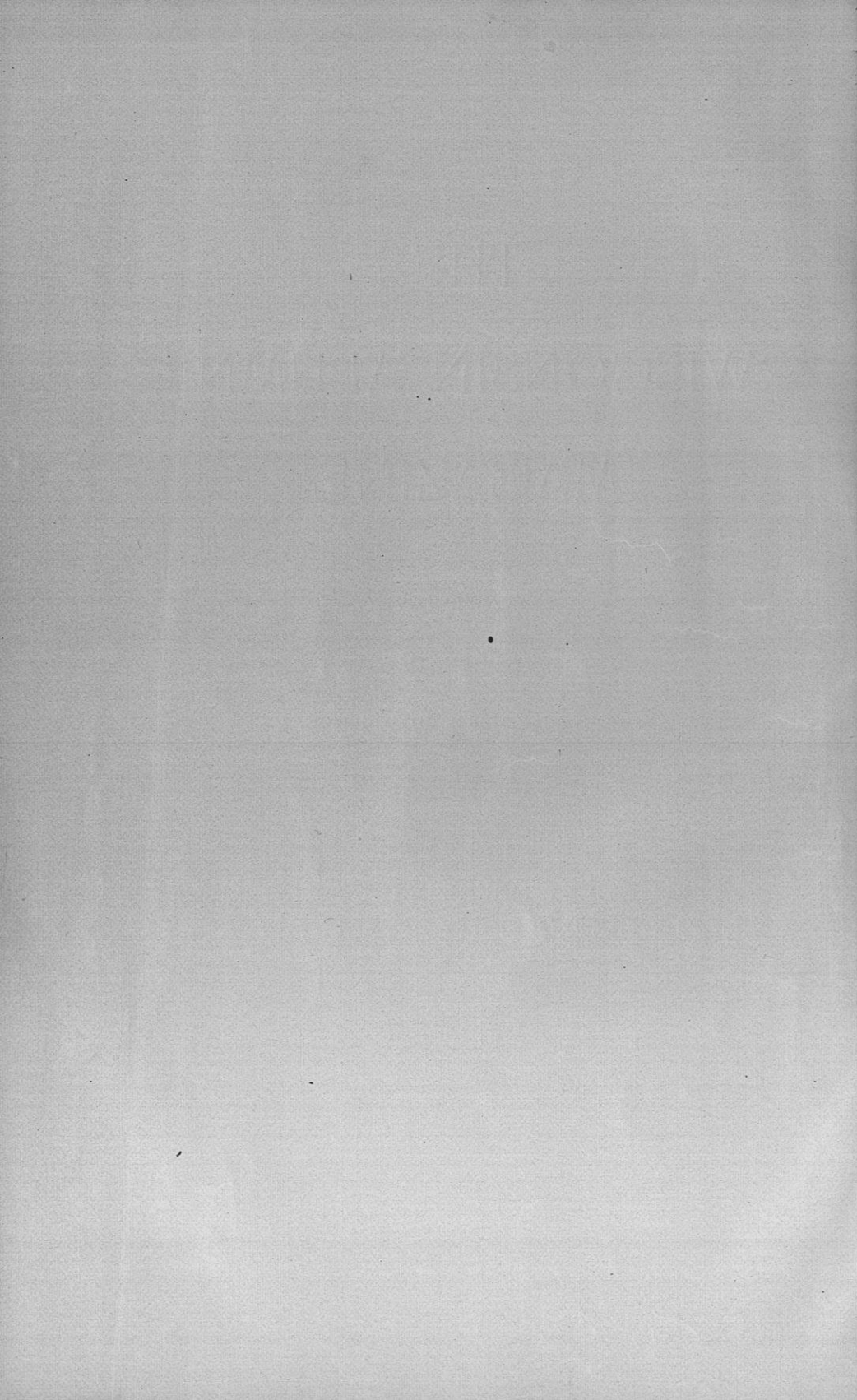
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THE WISCONSIN ALUMNI MAGAZINE

Vol. VI.

February, 1905.

No. 5.

The Month Current

Wisconsin Ranks High in Attendance.

Statistics relative to the attendance of American universities, annually compiled for "Science" by Registrar Tombo of Columbia University, show that the University of Wisconsin holds a leading place among the largest universities of the country. The college of letters and science of the University on December 1, 1904, the date on which these statistics in Science were compiled, had 1,452 students, the third largest enrollment in the country; Harvard being first with 2,412 and the University of California second with 1,453, only one more than the number at Wisconsin. In the number of students in agriculture, the University of Wisconsin takes second place with 529 students, Minnesota being first with an enrollment of 705. The University of Wisconsin ranks fourth among American Universities in the number of students attending its scientific schools, the enrollment this year being 809. The University School of Music takes fourth place in the matter of attendance with 220 students. The Graduate School of the University is fourth in size,

Columbia being first with 560 students; Chicago second with 388; Harvard third with 366; and Wisconsin fourth with 205. In total attendance excluding from the enrollment of other institutions the college of medicine, dentistry and theology, which are not included among the professional schools at Wisconsin, the University takes sixth place with 3,270.

The statistics compiled by Dr. Tombo bring out some interesting facts in regard to the relative number of men and women in co-educational institutions. In the college of liberal arts of a number of universities the women outnumber the men. At the University of California, for example there are only 505 men and 948 women; at the University of Nebraska and 315 men and 633 women, at the University of Minnesota 470 men to 775 women; at the University of Chicago 604 men to 784 women. At the University of Illinois division is more even, as the registration shows 351 men and 325 women. At the University of Michigan there are about 100 more men than women, the enrollment being 729 men and 624 women. At the University of Wis-

consin the men outnumber the women by 236, as there are 844 men and 608 women.

Phil King Recalled.

Phil King will coach Wisconsin next fall! By all odds the best piece of athletic news which the Magazine has had to announce in many a day, is the recall of the man who gave Wisconsin a place at the top in Western foot ball. His election insures the 1905 team an efficient, far-seeing, magnetic leader, one of the few really great coaches in the country. The most perfect master of defensive tactics that ever coached in the West, King showed in the teams of 1896, 1897, 1900 and 1901, that with any sort of material he could develop a hard-hitting, savage offense. His return to assist in the coaching at Princeton for a considerable period during each of the last two seasons has put him in touch with the latest progress of the game in the East and should be of especial advantage to him and to Wisconsin next fall.

Alumni who were in the University during the seven years when King was at the foot ball helm remember with a glow of satisfaction the splendid, consistent record which the University maintained during that time and welcome him back with enthusiasm. Students now in college, who have to go back to King's time to recall any foot ball victory worth mentioning, believe that his return means the regaining of departed laurels. In addition, King always had the respect and confidence of the faculty and the expressions of its members are all characterized by a note of gratification over the solution of the

coaching problem afforded by his recall.

With the return of Phil King passes, for the present, the graduate coaching system with which the University has experimented for two years, and in commenting of its abandonment one cannot, in justice, forbear a word of praise for Arthur Curtis, a splendid student, a wonderful player and a loyal friend. Wisconsin will always remember him as her greatest tackle, and connect his name with the foot ball glories to which he contributed so much in his undergraduate days, rather than as the responsible head in a coaching experiment which was practically fore-doomed to failure. No coach ever worked harder or more loyally to achieve success than did Art Curtis for two successive seasons, and his failure to make a showing in those years was due to causes over which he had no control; causes which, for the most part, are of no further interest and which it is no longer profitable to analyze.

The Jubilee Volume.

Inquiries regarding the Jubilee memorial volume are becoming a regular part of the Secretary's mail, and an explanation seems to be in order. The book is being published by the Jubilee Committee and will be ready for distribution by March 1. As soon as the edition is out, the Alumni Association will receive copies for all its members who were in good standing December 1, 1904, i. e.,—whose dues had been paid for the current college year prior to that date. This will be the only general distribution of the volume. From this statement it will be clear that the Secre-

tary can hardly be held accountable for the delay which, indeed, is relatively slight. The Alumni Association has nothing whatever to do with the publication of the book except to receive gratis, copies for its members. The books were not expected earlier than some time in January and we believe that when they are received, alumni will find them an ample compensation for the delay. Some idea of the extent of the volume may be gained from the fact that it will cost the Association sixteen cents a copy to deliver them at publisher's book rates.

As has already been announced, this memorial volume will contain the complete program, the text of all the formal addresses of the Jubilee, and the list of honorary degrees conferred, and will be a very high class piece of book-making, within the limits set upon the publication by the available funds.

Appropriation Bill to Provide Fixed Income.

This department in the January issue pointed to the serious situation which confronts the University as a result of the rapid increase in enrollment indicated by President Van Hise in his biennial report. The University is growing with wonderful rapidity and this growth must be met by a corresponding increase in its revenues or Wisconsin will fall behind its leading competitors in the Middle West. With this situation uppermost in their minds, the members of the Regents Committee on legislation for the University, after mature consideration, decided to strike for something more substantial than

the hand-to-mouth system of biennial appropriations upon which the institution has subsisted in the past. The paramount need of the University is not merely an adequate but a reasonably fixed income, on the basis of which plans may be made for longer than two years in advance. The Committee therefore, decided to ask for a 2-5 of a mill tax, the proceeds of this levy to supply not only all the ordinary running expenses of the University but the cost of buildings and all other expenditures which in the past have been provided by legislative appropriation.

If it becomes a law it will yield about a quarter of a million dollars, which is a substantial increase on the present income, but no more than the rate of growth of the University demands. But the great advantage of the arrangement which the bill proposes is that, if it passes, it will afford a definite basis for plans for the future. President Van Hise, in his biennial report, speaking of funds for needed buildings—though the statement applies with equal force to every sort of expenditure—said: "The importance and value of establishing a policy to extend through a number of years, cannot be over-estimated."

Inasmuch as the present bill, if passed, will not begin to yield an income until next year, it makes special provision for buildings and equipment, imperatively demanded during the present year.

Dramatics for Worthy Causes.

The presentation, within a month, of two plays by the leading dramatic organizations of the University for the benefit of such worthy causes as the

University settlement and the establishment of a fund for the endowment and maintenance of a bed for sick and needy students, in the Madison hospital, is worthy of more than a passing word. There is much to justify the criticism so often passed that our education is materialistic and selfish in its tendencies. Only too frequently have we heard, after some hazing or other absurd student demonstration, that the whole system is wrong, that we are cultivating the intelligence and ignoring the proper moral training; that student bodies have no collective conscience; that our morale is deteriorating, and that college students as a class are lacking in the finer sympathies and sensibilities.

This being true, those who do believe in our educational system, who know and have faith in its production of the best and finest of fruits of edu-

cation, men and women of high character, cannot but find satisfaction in such phases of college life as the Haresfoot club benefit for the University social settlement in Milwaukee, and the Edwin Booth and Red Domino Dramatic Clubs' joint production for the benefit of a sick fund for needy students. Such activities as these indicate that students, usually thoughtless, do stop at times to consider that University life means something besides a better preparation for earning an income—or dissipating one. As a symptom of the existence of a sense of civic duty in the student body it is encouraging. Incidentally, it is pleasing to the friends of both the dramatic organizations to find them thus devoting their energies to worthy causes, instead of wasting them in a meaningless struggle for social distinction.

President Van Hise's Baltimore Address.

President Van Hise delivered one of the leading addresses at the annual session of the Association of American Universities, at Baltimore, January 14, discussing "The Opportunities for Higher Instruction and Research in State Universities." In the address President Van Hise took the same ground regarding the necessity for advanced and productive scholarship in state universities which, since his election, has been an important part of what may be called his presidential platform. In the course of his address, President Van Hise brought out

a number of interesting facts concerning the investigation and research work that is being carried on by the members of the Wisconsin faculty. He spoke in part as follows:

"Upon the whole it seems to me that the surest test of the opportunities for advanced instruction and research in a university is afforded by the amount of productive work which the instructional force itself is doing. A faculty pervaded by the spirit of research gives the atmosphere necessary for higher instruction. To such an atmosphere graduate students will be

drawn. In such an atmosphere scholars and investigators will be produced. With this belief in mind, I have asked the members of the instructional force of the University of Wisconsin to give information concerning the investigations which they have made during the time they have been at that institution, and also a statement of the researches upon which they are now engaged. In most cases the replies are sufficiently full to afford an approximate judgment of the importance of the work done. The answers show that the men reporting have produced a formidable list of works from small studies to elaborate treatises. Of course, a large number of text-books have appeared, but these are not considered in this connection. The answers show that at the present time more than one hundred and thirty, somewhat less than two-thirds of the faculty, are engaged in productive work of some kind. About ninety of these may be called minor and about forty may be called major investigations. In making this discrimination, I have regarded the minor investigations as those in which series of papers concerning disconnected subjects have been published, and have regarded the major investigations as those in which a general line of work has been followed continuously for a considerable period of time. Thus men are placed among the minor investigators who give lists of many published papers, while other men are placed among the major investigators who as yet have not published more than two or three pieces of work. Among the studies and investigations which are ranked as major the larger part are of moderate importance. A few are

large studies which have extended through several to many years and the results of which mark them as important contributions to knowledge.

"The information furnished seems to be adequate evidence that at the present time a sufficient number of men are engaged in higher instruction and research at Wisconsin to give a favorable environment for such work. But this general statement required some qualification when applied to the individual departments. In many of the departments of instruction it is entirely true, but in others we must unfortunately admit that the task of raising them to the university plane largely remains to be accomplished."

In continuing President Van Hise considered the future of research in state universities.

"During the past quarter of a century I have seen Wisconsin change from a small college to its present condition of comparative prosperity. During the same period similar transformations have taken place in a number of state universities. I believe present accomplishments to be the mere beginnings of the development of advanced instruction and research in state institutions. I expect to see these lines of work continue to expand until state universities in this country are doing the work for their respective states that the state universities of Germany are doing for the states of that empire. I am aware that there has been general disbelief upon this point in the past. I know that in many sections of the country the conviction is still widely held that the people will not tax themselves for work of university grade. I know that men may be found in the faculties of the state

universities who hold this view. They may be found among the presidents of the group of larger state universities. But it seems to me that the facts of the development during the past twenty-five years clearly show those who hold this view to be wrong. Already in a number of states, the people are taxing themselves to support advanced instruction and research. Furthermore, and this is most important, in those institutions in which the most advanced stand has been taken with reference to high-grade work there is little or no objection to the movement. To illustrate, at Wisconsin I have had no criticism of the departments where there are several strong men who are doing productive work. The complaints which have come to me have been in reference to those departments where lack of funds or lack of courage on the part of the administration has prevented their advancement to a higher plane.

"But suppose I am wrong in reference to the support by the state of advanced instruction and research. Still the question as to the place which these lines of work are to take in the state universities is open. Why should not a state university receive help from private funds for such purposes as well as other universities? No good reason can be assigned for the belief that state universities in the future will not receive liberal support from private funds. It is true that in the past this has not been the case, but the same was also true of private institutions until very recently. The great sums in the United States for advanced work in private institutions have been given within the past thirty years. During that time Johns Hopkins, Clark, Chicago, and Stanford

have been founded. Twenty-five years ago other prominent institutions, now doing advanced work,—Yale, Harvard, Princeton, Pennsylvania, Columbia,—had but a fraction of their present income and had hardly begun to develop advanced and research work.

"When the alumni of the state universities become numerous and some of them wealthy, why should they not give to these institutions as do the alumni of private universities? Indeed, if there be any difference between the two it should be in favor of the state institutions, for the men who have obtained their education at such universities have returned a considerably smaller proportion of its cost than have those educated in private institutions. I hold the conviction firmly that in the future the alumni of state universities will give liberally to their support. Nor do I believe that the gifts to state institutions will be derived from alumni alone. What valid reason can be assigned for the belief that the men who have gained their wealth by taking advantage of the natural resources of the states will not turn back some portion of this wealth for higher education? Indeed, this has already begun. It is only within the past score of years in the middle and far west that we have seen large accumulations of capital, and have had the feeling of assured prosperity. Now that this situation has come about, gifts from private sources have begun to flow to the state universities. The largest recipient has been the University of California. At Wisconsin and in other states there have been the small beginnings of the flow of private funds to the state universities.

"In the past many of the men who

have given money to educational institutions have been inspired by a religious motive. But in the United States at present there are a large number of men of wealth who are moved by the educational and ethical impulse and who are not impelled by the religious motive. In the future such men, I doubt not, will give largely to state universities. To such persons it can be made to appear that a state is at least as safe a trustee as any individual or corporation. The wealth of the people of the entire state is surety for such funds.

"In conclusion, therefore, I hold that in the future the state universities will be in a much stronger position with reference to advanced instruction and research than at present. The state universities have an official hold upon their respective states. The states have a pride in them as their institutions. In each of a number of states the feeling is very general among the people as well as the alumni that their university must be developed to as high a plane as private institutions. This hold upon the state already secured by a num-

ber of the larger state universities is yet to be gained by others. Where this position has been attained there is no reason to believe that it will ever be lost. As already pointed out, a number of states are now granting large sums of money to their universities for advanced instruction and research. It is my deep seated conviction that state funds for such purposes are sure to greatly increase in amount. And in addition to the certain support by the state of productive scholarship the state universities in the future have at least an equal right with private institutions to expect assistance from their alumni. Finally, the state universities may occasionally expect funds from wealthy men, not alumni, inspired by the ethical and educational motive. Therefore, it seems to me my initial proposition that the opportunities for higher instruction and research in state universities are as great as in the average of private institutions of similiar incomes is conservative. Further, in the future these opportunities are certain to be rapidly improved and extended."

Services of the College of Agriculture to Oat-Growers.

Had it been announced, a decade ago, that a professor in the College of Agriculture, would, as the result of certain simple tests which he was conducting, save the farmers of the State of Wisconsin \$40,000,000 in a few years, there is little doubt that

people in general, and the farmers in particular, would have scouted the idea. Yet this is exactly what has been accomplished as a result of the investigations of the College of Agriculture into the nature of oat smut and the proper methods of preventing

it. An increase of nearly 20 per cent in the great crop of such a staple grain as oats is a monumental achievement, yet this has been accomplished.

When it is remembered that Wisconsin ranks among the greatest oat producing states in the country, and each year over two and one half million acres of land are sown with oats, which produce a crop worth annually from \$25,000,000 to \$30,000,000, the true significance of these results is evident, for investigation shows that before the University method of preventing oat smut was generally adopted, the loss to the oat crop of Wisconsin generally equalled 18 per cent. This waste of nearly one-fifth of the crop meant to the farmers of the state an annual loss of 18,000,000 bushels of oats, or in round numbers nearly \$5,000,000.

These experiments affected not only the oat crop, but also barley raising. Wisconsin produces about 15,000,000 bushels of barley annually, and is thus one of the great barley states of the union. The University Experiment Station found that the annual loss in the barley crop due to smut amounts to over 600,000 bushels. As the same preventive can be used for both the oat and barley crop, there has been a great saving to the farmers annually in the raising of barley as a result of these experiments of the College of Agriculture.

Anyone who is familiar with Wisconsin farming knows that at threshing time when the oat sheaves are being fed into the cylinders, there usually pours out at the rear of the machine a cloud of smoke-like dust which makes the work very disagreeable. The average person unac-

quainted with the exact conditions of the crop in threshing, simply considers it so much dust and pays little attention to it, except as it produces a disagreeable choking effect characteristic of dust in general. Few realize that these clouds of dust are made up in large part of smut spores which are really the seeds of a fungus that grew and ripened on the oat plants. These spores or seeds of the fungus, floating about in the air, lodge in the oat grains as they come from the spout of the separator and remain there until seeding time, when the farmer takes his oat seed to the field for sowing. The fungus spores, if they still adhere to the grains, as they usually do, go into the ground with the seed, and there the trouble begins. Once planted with the seed, the fungus spores grow from day to day with the tiny oat plant. Each spore sends out a minute tube or projection which works its way into the tissues of the young oat plant and spreads all through it as it grows. In this way the fungus live only within the stem and leaves of the growing grain, and the farmer does not see it as the crop advances toward maturity. As the seed head forms, however, the fungus growth inside the plant pushes itself upward and concentrates itself more or less in the forming grains. Constantly sucking the substance from these grains of oats, the fungus develops its spores or seeds, so that instead of a full head of oats, the farmer has only a head of these spores of oat smut. Thus the heads of the grain attacked by the fungus are entirely wasted for no seeds form. A single oat plant will produce hundreds of thousands and even perhaps a mil-

lion of these minute spores. It is these hundreds of millions of oat smut spores that, as they pass through the separator at harvest time, give off the great clouds of dust, and then as seeds of the fungus, so to speak, settle in the good grain to begin over again their life history of destruction.

The history of the experiments which led to the prevention of this costly blight upon the oat crop is an interesting one, as it illustrates how the results of pure science may be applied to the practical problems, such as those of agriculture. Many years ago a number of scientists devoted much time to the study of many of the products found in common wood smoke. In the course of these studies the scientists found one particular compound which has come to be known as formaldehyde. Another scientist working along other lines, made the important discovery that formaldehyde was death to fungus and bacterial life, and as a result, this product of ordinary wood smoke has become one of the most valuable cleansing and disinfecting agents. With these scientific discoveries as a basis, Professor Bolley of the North Dakota Experiment Station, seeking remedies for fungus diseases of plants, experimented with formaldehyde as a treatment of oat seed. To his great satisfaction he found that under certain conditions seed oats soaked in a weak formaldehyde solution would produce plants that were free from fungus pest. The University Experiment Station, learning of this work almost immediately, saw at once the importance of these experiments to the farmers of Wisconsin and without delay continued Profes-

sor Bolley's tests on a large scale. Late Professor E. S. Goff devoted much time and energy to these experiments, and as the results were almost uniformly successful, began at once the dissemination of this very valuable information of the subject to the Wisconsin farmers. Professor R. A. Moore of the department of agronomy later took charge of the work and at once began expensive investigations as to the amount of damage and the possibility of extending the preventive treatment rapidly to the farmers of the whole state.

The first step was to estimate the area and extent of the damage caused by the oat smut. Professor Moore visited hundreds of farms in the various counties of the state in order to conduct his tests in as wide an area as possible. In carrying out these tests he carried a hoop about the size of an ordinary barrel hoop, which, on entering the field, he cast out into the midst of the growing grain so that as it fell to the ground, it dropped over a number of oat plants. Then separating carefully the stalks of grain, he would count the number of stems enclosed by the hoop and also the number of smutted and sound oat heads on these stems. By conducting a very large number of these tests in all parts of the state, he was able to determine with very considerable degree of accuracy the percentage of damage done. Professor Moore's examination showed that on the average, the loss to Wisconsin farmers in their oat crop during a series of years equalled 18 per cent. Estimating the maximum yield of the whole state at 100,000,000 bushels, he found that this meant a loss of 18,000,000 bushels

of oats, valued in round numbers at nearly \$5,000,000 annually, which was lost to the farmers of the state as a result of this blight. All damage by oat smut must be regarded practically as a loss to the farmer, for he prepares the ground for a full oat crop, sows the seed in it, and harvests the standing grain. The smutted worthless stems have cost him just as much as the good ones, and hence every smutted oat head is so much seed and work lost.

The extent of the damage and the simple method of preventing it having been found, the next step was to give the widest of dissemination to this valuable information. It was no easy problem to reach the hundreds of thousands of farmers in the state who are raising oats, and give them the necessary information for the successful application of the formaldehyde treatment. The first method adopted was to prepare a bulletin giving the results of the experiments and methods of treating the oat seed. Up to the present time over a quarter of a million copies of this oat smut bulletin have been sent broadcast over the whole state, so that every farmer interested might get this valuable information free of cost. Members of the faculty of the College of Agriculture also explained fully the means of prevention by the formaldehyde solution to hundreds of farmers at meetings of the farmers' institute, agricultural societies, and similar gatherings of those interested in agricultural enterprises.

As a result of the broadcast distribution of literature on the subject in the form of experiment station bulletins and the papers read and discussed

at agricultural meetings, enterprising farmers everywhere in the state are now protecting their oat crops from the fungus. The results are that at present over two-thirds of the 18 per cent loss of the entire crop has been prevented. Not satisfied, however, until the blight is practically exterminated, the College of Agriculture is still carrying on the work steadily, and information is still being disseminated as widely as possible among those who do not as yet realize the importance of the formaldehyde prevention. In a few years more, it is the hope of Dean Henry and his staff, that practically all the farmers of Wisconsin will be growing seed treated with formaldehyde or using seed from crop which has been so treated, and that thereby the oat fields of the state will practically be freed from the destructive smut.

The method of treating the seed grain is very simple, so simple in fact that there is no reason why it should not be universally employed. A pint of formaldehyde which costs about fifty cents is poured into a barrel containing some 40 gallons of water. The oat seeds which are placed in gunny sacks are let down into this barrel and allowed to soak in the dilute chemical solution for a few moments. They are then taken out and dried, after which they are ready for sowing without any further treatment. Thus the cost to the farmer is scarcely more than a cent a bushel; which is certainly very little when compared with the destructiveness of the blight and the great loss which it entails.

These experiments in the prevention of oat smut illustrate admirably the application of scientific discovery

and experiments to the practical economic and industrial problems. Had it not been for the discovery by experimental chemists in Germany of the wood smoke product, formaldehyde, and the discovery by the zoologists and bacteriologists that this new chemical was destructive of fungus and bacterial life, the oat smut prevention would have been impossible. Thus it is that to the chemist, the zoologist and bacteriologist, working on the various problems of pure science, the Wisconsin farmers are indirectly indebted for the saving of over \$5,000,000 a year. The college of agriculture and the experiment stations are the indispensable means of applying these scientific discoveries to the practical problems. After the original application by the North Dakota experimenter of the scientific discoveries of the relation of formaldehyde to fungus growth, the efforts of the Wisconsin College of Agriculture in conducting these experiments on a large scale, produced the great practical results. It was not, however, until the results of these experiments of the College of Agriculture were given to the hundreds of thousands of farmers of the state by means of the experimental station bulletins, that the experiments were of much practical importance to the agricultural interests of the state; but when once this information had been spread broadcast and was used by the farmers, the remarkable practical results involving the saving of over \$40,000,000 was finally achieved.

The College of Agriculture has also rendered the farmers of the state another splendid service in connection with the oat crop by its experiments

with seed oats which culminated in the development of the so-called Swedish oats. Dean Henry, in his biennial report gives the following summary of these investigations:

"In 1898 this College received several new varieties of seed oats from the U. S. Department of Agriculture, Washington. One lot of five pounds was secured by a government expert in Russia. When all the varieties including this one, some forty or fifty in number, were tested, the one from Russia proved superior. Mr. Moore carefully saved all the seed from the first little crop and re-sowed it the following season, repeating the process for several years. To more extensively test its value he placed a quantity with growers at several widely separated points in the State where it was grown in comparison with the usual varieties of the community. In nearly every instance the yield in such trials was highly satisfactory. In the spring of 1903 we were able to send at least one two-bushel sack of these oats to each county in the State, and again most tests showed marked superiority. As a result of the interest taken by the farmers and the wide distribution given the seed, at least one quarter of a million bushels of this variety of oats was sown by Wisconsin farmers in the spring of 1904, all of which originated from the five pounds of seed received in 1898. Mr. Moore estimates that at least four million bushels of Swedish oats, as we call this variety, was grown by our farmers the present season. Through the use of this oat our farmers are securing a yield of from two to ten bushels more of oats per acre than with the varieties previously

used. As we grow about 2,500,000 acres of oats each year, it is apparent that the introduction of this one

variety of improved seed is worth a vast sum to our State."

News

Progress of the University

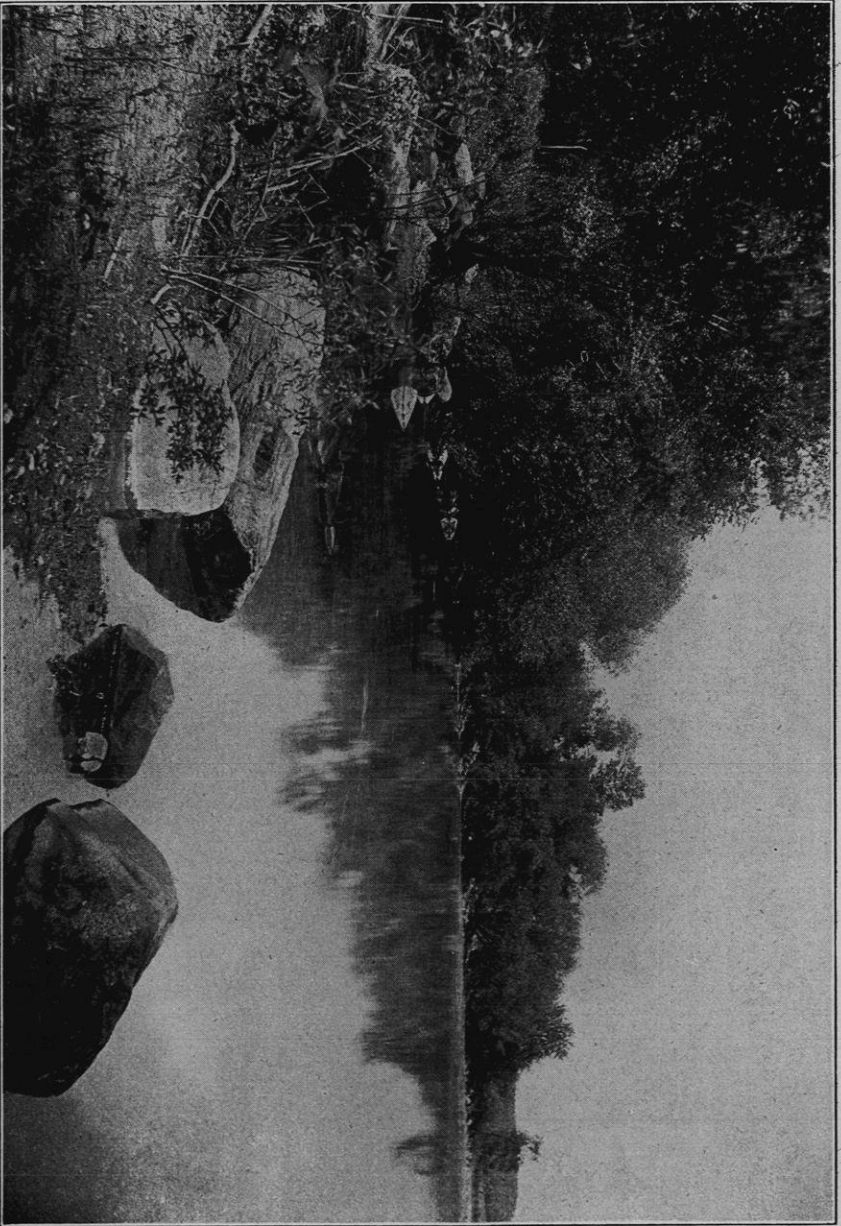
New Courses in Meteorology.

Among the new fields in which instruction is to be given at the University for the first time this year, is that of meteorology, a course in which will be offered during the second semester, which begins this month. The work will be in charge of Mr. James L. Bartlett, observer at the University station of the United States Weather Bureau, which was established in North Hall last fall. At the time that the weather bureau station was located at the University, permission was granted by Chief Willis L. Moore of the United States Weather Bureau, for the instruction of university students in meteorology by the local observer, and the present course is the result of the arrangement which was made at that time. As the local station was not fully organized at the beginning of the present college year, it was necessary to postpone the course until the opening of the second semester in February.

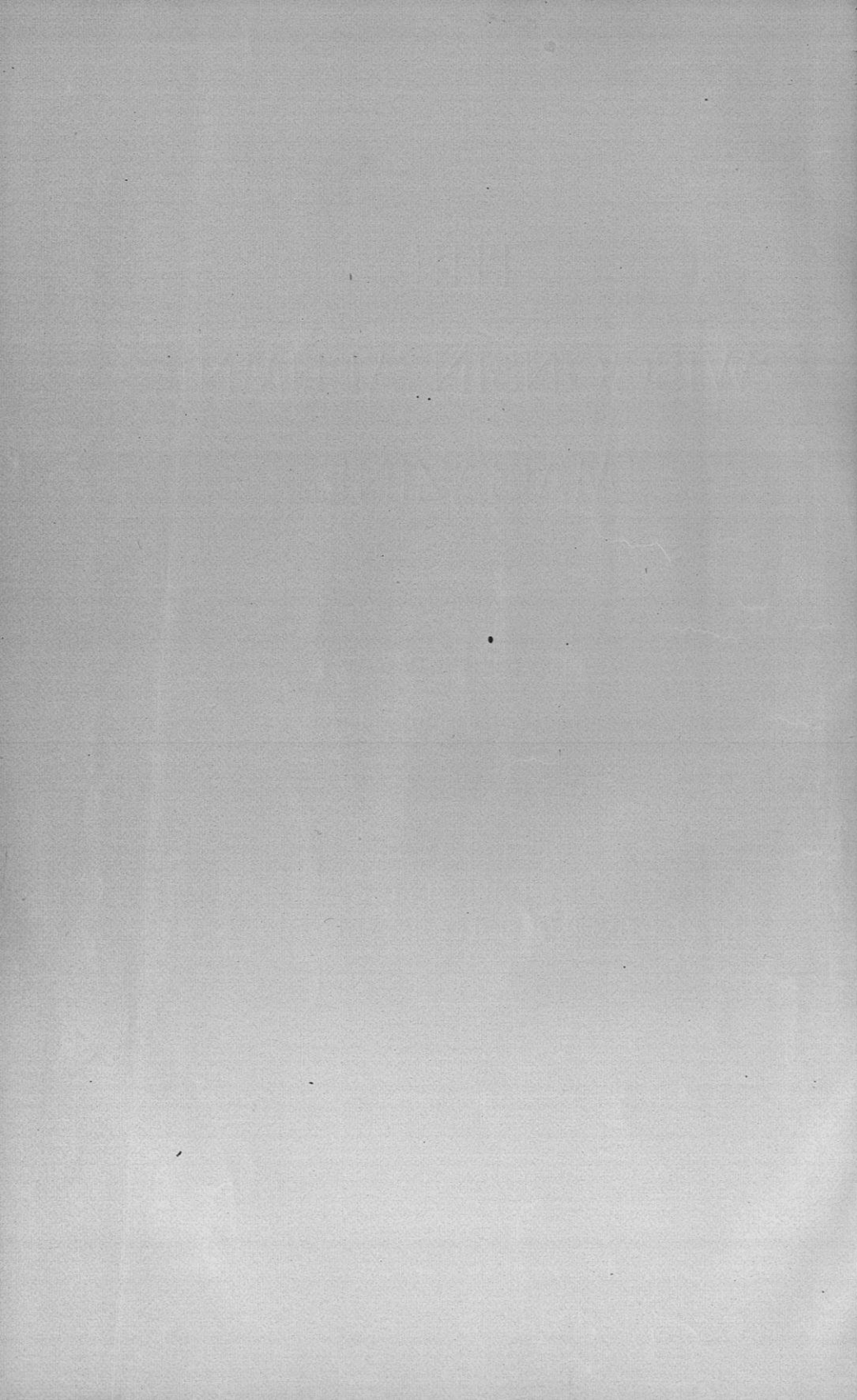
This work will be of great interest and importance to students in many departments of the University, and it is expected that there will be a large enrollment. The course will be of practical value to those who are preparing for various professions, and especially to students in commerce and agriculture. Under present conditions it is necessary that men who are engaged in various forms of business, should have a knowledge of the weather conditions, for these are often of incalculable value to them in their business affairs. Grain brokers, railway managers, commission managers, produce dealers, and shippers

generally are only a few of those whose interests are at times greatly affected by the weather. To the farmer weather conditions are naturally of vital importance, and students who are preparing to engage in agricultural pursuits will naturally desire to have a scientific knowledge of meteorological conditions. Besides this practical value this course will appeal to many who are preparing to teach the natural sciences in secondary schools and colleges, and to those who intend to specialize in astronomy, geology, and such branches of engineering as hydraulics. The University students, therefore, are particularly fortunate in having an opportunity to study meteorology under the favorable conditions afforded by the new weather bureau station which is equipped with the latest apparatus for observing and recording the weather conditions.

The course as outlined by Mr. Bartlett will consist in part of both the theoretical and practical phases of the subject. On the theoretical side, the work will include a consideration of the atmosphere, its composition and its relation to animal and plant life; of the measurement of the atmospheric pressure by means of barometers and the preparation of barometric charts. The movements of the air, particularly those more important ones involving direction and velocity of winds, and means of determining these, will be presented. Atmospheric moisture, formation of dew, frost and clouds, predictions of frost, protection from frost, are subjects to which considerable time will be given because of their practical importance. Methods of



SHORE LINE ALONG UNIVERSITY DRIVE.



observing movements of clouds, high winds, cyclonic storms, and particularly cyclone thunder storms and tornadoes will form an interesting part of the course, the general purpose of which will be to familiarize the student with the common phenomena of the weather and their causes.

Besides the theoretical part of meteorology, the work will include a study of methods of making observations and predictions of weather, as carried on in government observatories, and the manner of distributing weather predictions. In this connection the local station offers excellent opportunity for a first-hand study of these matters, since it is equipped with the latest apparatus and receives daily reports from stations in all parts of the country. The locating, installing, and equipping of these weather observatories will also be discussed. The apparatus necessary for such observations will be carefully explained, and instruction will be given in its use, as well as in the methods of taking and recording observations. A valuable part of the work will consist of actual practice in the methods of observations and the preparation of weather maps. After these details have been mastered, the student will be set to work forecasting the weather from the maps thus prepared and from the reports and predictions received from all parts of the country. Upon completing the course the student will have a thorough knowledge, both of the theory and practice of meteorology and will be prepared to apply it both for practical and scientific purposes.

The establishment of the United States Weather Bureau Station at the University last fall was brought about through the efforts of President Charles R. Van Hise and Professor George C. Comstock of the Washburn Observatory. Professor Comstock has had charge of the meteorological records which have been kept at Washburn Observatory for the past thirty-five years. Early in the '70's, when the signal service was being extended throughout the country, the Washburn Observatory was made one of the stations and regular reports of the observations made were forwarded to the United States Weather Bu-

reau as a part of the regular service. In 1883, for reasons of economy, the signal service was discontinued at a large number of points in the country and among others at Madison, but the weather station was continued, and under Professor Comstock's direction, complete reports were kept of the meteorological conditions. During the summer months, when these conditions are of greatest importance to the farmers, daily reports were forwarded to the Chicago station, and during the other portions of the year monthly summaries were forwarded to these headquarters. Thus the Washburn Observatory has complete records for over a quarter of a century. The records have proved valuable in various ways, and have frequently been used as evidence in court in determining the exact weather conditions at a particular time when those conditions were of importance in legal matters. Upon the establishment of the University Weather Bureau Station, it was decided to discontinue these records and, accordingly, upon the first of January the meteorological observations at Washburn Observatory ceased.

A bill recently passed by Congress for the Department of Agriculture, of which the United States Weather Bureau is now a part, provides an appropriation of \$48,000 for the purchase of sites and erection of buildings to be used for weather observatories, among which is to be one at the University. At a recent meeting of the Board of Regents the United States government was given a site on the University campus for the erection of this observatory, and steps will no doubt be taken shortly by the United States Weather Bureau, under the direction of Chief Willis L. Moore, for the erection of a separate building upon the University campus for the use of the local weather bureau station.

Dr. Howe to Lecture on the American City.

Arrangements have just been completed for a series of ten special public lectures on "The Problems of the American City" to be given at the University of Wisconsin during the first week of the second

semester, by Dr. Frederick C. Howe of Cleveland, Ohio. The course, which will begin on February 20 and continue until March 3, will include a discussion of the following topics: The New Civilization; The American City at Work; The Sources of Corruption; The Boss, the Party and the System; The Way Out—Municipal Ownership; The City Republic and Its Charter; The City's Wreckage and Its Wards; The City's Home; The City's Treasure; The Twentieth Century City.

Dr. Howe, who received his doctor's degree at Johns Hopkins University in 1892 and subsequently studied in Germany and the New York Law School, is at present professor of law at the Cleveland College of Law and lecturer on taxation at Western Reserve University. He is the author of a book on "Taxation and Taxes in the United States under the Internal Revenue System," and is a law partner of James A. Garfield, Jr., of the Department of Commerce, and Professor H. A. Garfield, of Princeton University. Dr. Howe has given especial attention to municipal affairs and has been closely identified with the movements of the municipal improvements, both in administration and in the beautifying of the city. He has just returned from an extensive tour through Europe in the course of which he has made a thorough study of municipal systems in the chief cities of England and the continent; and is, therefore, well qualified to deal with the subjects of municipal reform from the comparative study of European and American cities. These special lectures are to form a part of the regular University course in municipal government, which will be continued during the remainder of the semester by Dr. J. D. Barnett of the department of Political Science.

Major E. R. Jones to Lecture on Contemporary English Politics.

Major E. R. Jones, formerly a resident of Wisconsin, who for many years was consul general at Cardiff, Wales, and who is editor-in-chief of the *London Shipping World*, the principal English periodical representing the interests of the merchant marine, has been engaged as special lec-

turer for the coming session of the University summer school. He will deliver a series of lectures on political and economic life in Great Britain, in the course of which he will deal with the present state of British political parties, the political and economic problems now before the British people, and conditions of British industrial and commercial life. He will also deliver a series of public lectures on Gladstone, under whom he served with distinction, as a liberal member of Parliament, for a number of years; and on other prominent English statesmen of the last twenty years.

Major Jones, who is a native of Wales, came to this country in 1855 and served with conspicuous bravery as major in the Civil War. After the war Major Jones returned to Milwaukee where he practiced law for a number of years. He was appointed United States consul to New Castle in 1870 and subsequently was made consul general for Wales, with headquarters at Cardiff. During his incumbency in these offices he made a series of valuable reports on shipping, commerce, and ship building. In 1879 Major Jones resigned his office and resumed his British citizenship, in order to stand for Parliament, to which he was elected in 1885. He held his seat for ten years, until the great conservative land slide in 1895, and as a member of the liberal party took a prominent part in the Parliamentary debates during the leadership of Mr. Gladstone and Lord Roseberry. As editor of the *London Shipping World* and because of his intimate acquaintance with English political, industrial and commercial life, it is anticipated that Major Jones' lectures at the University will be of great interest to students of political science and economics.

Gifts to Geological Museum.

The geological museum of the University of Wisconsin has recently received a valuable addition in the form of a large collection of specimens of ores and rocks, together with a model of a section of a lead and zinc mine, all of which formed a part of the mines and metallurgy exhibit at the recent St. Louis exposition. The contributions were made by a number of differ-

ent exhibitors, including the United States Geological Survey, the New Jersey Geological Survey, the Arizona Copper Mining Companies, and the Wisconsin Geological Survey.

These additions are particularly valuable since they contribute materially toward completing the collection of representative iron ores of the United States, which the department of geology now possesses. They include typical samples of iron ore from New York, Arizona, Alabama, and Wyoming, and also some 100 samples of ore from the Minnesota iron ranges, with the chemical analyses of each.

A complete set of the coals and the test products from the coal testing plant of the United States Geological Survey in the mining gulch was obtained through Dr. Parker and Dr. Pratt, who had charge of the tests. Specimens of raw materials, partially manufactured forms, and completed products of the cement industry was obtained through the New Jersey Geological Survey.

The most valuable part of the collection, because it is one that would be extremely hard to duplicate, consists of a complete set of specimens of copper ores and minerals from the different levels of the Copper Queen mine at Bisbee, Arizona, which was generously contributed by the Arizona copper mining company.

In addition to these samples of ore there are great numbers of rare and interesting mineralogical specimens, many of them of extremely large size. Among these were large heart-shaped calcite twin crystals from the Joplin district of Missouri and large feldspar crystals from Pennsylvania. In addition to these specimens obtained from outside sources, the entire collection of the State Geological Survey was turned over to the geological department. This includes the large section of a Wisconsin lead and zinc mine which was prepared by Mr. E. T. Hancock, '01.

Experiment Station Warns Against Dangerous Adulterations.

The feed inspection department of the Experiment Station of the University has

recently ascertained that a shipment of ground rice hulls has been brought into the state. As there is danger that this material may be mixed with different feeding stuffs and sold as feed to owners of horses or other live stock, the Experiment Station suggests that buyers carefully examine such mixed feeds before accepting them. Rice hulls not only have practically no feeding value whatever, but owing to their peculiar barb-like fibre and the large amount of silica which they contain are a very dangerous material to feed, records showing that they have even caused death of stock. The Station is desirous of securing additional information of any adulterations of the so-called ground or mixed foods or other feed stuffs that are being sold in the state, in order to warn owners of horses and live stock against them.

Professor Baker Lectures on Shakespearean Subject.

Professor George P. Baker of Harvard University delivered a course of public lectures at the University under the auspices of the English department in January, on "Shakespeare's Masters and His Stage." The course consisted of three lectures, the subjects being "Lyly and his Influence on Shakespeare;" "Marlowe and his Influence on Shakespeare;" and "Old London and the Bankside Theatres," which included a consideration of the Shakespearean stage and the manner in which the Elizabethan dramas were presented.

Professor Baker, who is professor of English literature at Harvard, is the American authority on the Elizabethan drama and the theatres of old London. He has contributed a number of interesting articles on these subjects to literary and critical journals, and has edited several Elizabethan plays. Professor Baker, who is an interesting lecturer as well as a scholarly writer, has recently delivered courses of lectures at the University of Chicago, Columbia, and other leading universities.

Become Editorial Writers.

At the meeting of the University faculty February 6, the resignation was announced

of John W. Gannaway of Grinnell, Iowa, graduate fellow in political science who has accepted a position as editorial writer on a Milwaukee evening paper; and of William D. Kerr, of Oak Park, Ill., graduate scholar in economics, who has accepted a similar position on the same paper. Victor G. Marquissee, '04, of Altoona, present graduate scholar in political science, was elected to the fellowship in political science made vacant by Mr. Gannaway's resignation; and Ernest Bradford Smith, '07, of Madison, was appointed to the vacant scholarship in political science. Charles C. Williamson, of Adelbert College, Ohio, was elected to the vacant scholarship in economics. Elias I. Tobenkin, '06, Madison, was appointed to the Lillian Page Allis Junior Scholarship in German, and Miss Rose M. Wagner, '05, Menasha, to the Lillian Page Allis Senior Scholarship in German.

The degree of bachelor of arts was granted to the following persons: Jessie Dwight Suter, Madison; Louis Woodworth Parks, Watertown; and Julius Ferdinand Derge, Eau Claire.

Wisconsin Teachers in the far West.

Professor M. V. O'Shea in the course of his recent lecture tour in the far west visited a number of normal schools, colleges and universities in which University of Wisconsin graduates are teaching. He delivered a number of lectures before teachers' organizations, and thus had the opportunity of meeting University alumni who are engaged in educational work.

In Montana particularly, Wisconsin men are very prominent in the educational affairs of the state. There are five Wisconsin graduates in the State Normal College at Dillon, which is rapidly becoming one of the strongest normal schools in the country. Among these are Profs. H. H. Swain, Ph.D. '97; Prof. William C. Bagley, M.S. '98; Prof. Wm. C. Ruediger, M.Ph. '02; Prof. Chas. J. Fenner, M.S. '04; and Miss Grace E. McNair, M.L. '99. Wm. L. Davis, Ph.B. '04, who was assistant in pedagogy at the University last year, is superintendent of schools at Kalispell,

Montana. C. W. McNown, Ph.B. '02, is a teacher of science at Butte High School.

There are several Wisconsin graduates in prominent positions in Colorado. In Colorado College at Colorado Springs, Professor John C. Shedd, Ph.D. '99, is professor of mathematics; and Henry A. Ruge, Ph.D. '02, is in the philosophy department. John R. Richards, B.L. '96, former captain of the 'Varsity football team, is principal of the High School at Colorado Springs.

In Utah, Harvey J. Holmes, Ph.B. '00, has been physical director in the University of Utah for several years past, but has recently resigned to take a similar position in the University of Southern California. Miss Nancy A. Leatherwood, Ph.B. '01, is teaching in the high school in Salt Lake City.

In Idaho, H. W. Hibbard, Ph.B. '01, is principal of the normal school at Lewiston.

Among others in North Dakota is Professor A. P. Hollis, B. S. '97, who is professor of pedagogy in the State Normal School at Valley City, and is taking a prominent part in local and state teachers' associations.

Successful Term of Dairy School.

The twelve weeks winter short course of the dairy school of the University of Wisconsin has just completed one of the most successful years of its existence. The total number of students enrolled this year was 140, which taxed the capacity of the school to the utmost, since the accommodations were originally designed for but 100 students. Most of those enrolled are from Wisconsin, but the number included two students from the Argentine Republic and one each from California, North Dakota, Ohio and Minnesota.

About one-fifth of this year's class had engagements to run factories during the coming season before the course was completed, and a number of others have made arrangements for positions for spring. Requests are being received daily at the Dairy School for graduates who can take charge of creameries

and cheese factories, and as usual, the demand is likely to be greater than the supply.

Instruction is still being given in the Dairy School to 183 students in the short course in agriculture and to 17 students who are taking the four years' agricultural course. The summer Dairy School for factory pupils begins on March 1st and the course will be continued from that time until November 1.

The Dairy class has presented to the school a framed picture of all its members and the Dairy School Debating Society voted the sum of \$15 to the National Dairy Union to aid in its work of checking the fraudulent sale of oleomargarine.

Great Historian Selects Wisconsin

In discussing the proposition of Kaiser Wilhelm for the interchange of professors between American and German universities, Professor Lamprecht, the noted German historian and professor of history in the University of Leipzig, recently said:

"The original suggestion to exchange professors came from men, who, like myself, visited America last year. Of the American universities, the best should be chosen and recommended, and among these there are some which wholly, or in partial lines of science, are doing grand work; for example, the University of Wisconsin at Madison. That University, which also has a model historical seminary, satisfies all external demands in the way of convenience of study, situation, and proper division of buildings."

Professor Smith Discusses Primary Election.

Professor Howard L. Smith of the College of Law of the University of Wisconsin read a paper on "The New Primary Law of Wisconsin," at the annual meeting of the Michigan Political Science Association, held at the University of Michigan, February 9 and 10. The program of the meeting this year was devoted to a discussion of primary reform, and included papers on the New York primary

law, the Chicago primary system, Bronson primary law in Ohio, direct nominations in Michigan, and primary elections in Minnesota. Professor W. A. Shaper, of the University of Minnesota, who was a member of the class of '95 at the University of Wisconsin and who continued his graduate work at Columbia, receiving the degree of doctor of philosophy in 1901, read a paper on "The Results of Primary Election in Minnesota." Professor Floyd R. Mechem of the University of Chicago Law School discussed "The Constitutional Limitations on Primary Election Legislation."

Dr. Tisdell Inaugurated as President of the University of Wyoming.

Dr. Frederick M. Tisdell, who was instructor in elocution at the University of Wisconsin from 1891-93, was inaugurated president of the University of Wyoming on Wednesday, January 18. President Tisdell was graduated from Northwestern University with the degree of bachelor of arts in 1890, and the following year became instructor in elocution at the University of Wisconsin, a position which he held for two years. In 1893 he received the degree of master of arts from the University and continued his graduate studies at Harvard for two years. In 1895 he was chosen professor of rhetoric and English literature at Oberlin College but after two years resigned his position to complete his graduate work at Harvard, from which he received the degree of doctor of philosophy in 1900. He was special lecturer in English literature at the summer session of the University of Wisconsin in 1900 and the same year was chosen professor of English literature at Armour Institute. Last fall he was elected president of the University of Wyoming.

Professor Sparling to Investigate Federal Administration.

Professor S. E. Sparling of the department of Political Science of the University of Wisconsin has been granted a leave of absence for the second semester in order that he may carry on a series of studies

which he has begun in the methods of federal administration. Dr. Sparling will spend most of his time at Washington observing the work of the various departments of the federal government, and in carrying on research work connected with the subject of federal administration, in the Congressional Library. After completing his work at Washington he will continue his study in the libraries of Boston and New York. Dr. Sparling will resume his work at the University next fall.

Mexican Student at the University.

Mr. Lauro Lopez Mendez of Apam, Hidalgo, Mexico, has just entered the Col-

lege of Engineering of the University of Wisconsin. Mr. Mendez is the third student from Mexico who enrolled at the University this year.

Professor Showerman Contributes to Journal of Philology.

Professor Grant Showerman of the department of Latin, who is filling the chair of Latin at Princeton this year, has an interesting article in the last number of the *American Journal of Philology* on Cicero's Appreciation of Greek Art, which is an amplification of the paper which he read before the Language and Literature Club last spring.

Daily Calendar

This department is conducted by L. W. Bridgman, '06.

JANUARY.

Friday, 6.—Carnegie Institution made grant of \$2,500 to Prof. Charles E. Burgess of department of electrochemistry for pursuit of investigations on the properties of pure iron and its alloys.—School of music gave program at convocation.—Theta chapter of Alpha Xi Delta, national sorority, installed at Wisconsin. Patronesses: Mrs. Grant Showerman, Mrs. Boyd H. Bode, Mrs. L. Wayland Dowling, Mrs. Scott Holland Goodnight, Miss Lucy Gay, Miss Elsbeth Veerhusen. Charter members: Misses Ora L. Mason, Sharon; Iva C. Allen, Madison; Eudora I. Cook, Nettie Cook, Lake Mills; Bessie C. Underwood, Madison; Ellen M. Rhoades, Fond du Lac; Augusta C. Lorch, Madison; Nellie N. Angell, Sun Prairie; Alma M. Runge, Lulu L. Runge, Madison; Mary E. Olin, Belleville; Mary E. McRae, Rhineland; Bertha E. Davis, Ruth Lyon, Bessie E. Adams, Madison.—Prof. D. E. Burchell and Dr. H. C. Taylor made collection of 2,500 specimens of raw products from all parts of the world, at St. Louis, for commercial museum.—Theta Delta Chi initiated Lee Post,

Frank Post and Lewis Francisco.—John A. Fairlie, professor of legislative and administrative law at Michigan, inspected university.

Saturday, 7.—U. W. skating rink in rear of gym. opened.—Pres. Van Hise left for Baltimore to address Association of American Universities on "The Opportunities for Higher Instruction and Research in State Universities." Convention chose him president for ensuing year.—Senior class play committee appointed as follows: Miss Frederica Shattuck, chairman; Miss Genevieve Eaton, Harry Wheelock, Alfred G. Arvold, Walter Darling.—New year's social given by Y. M. C. A.—Capt. Steinmetz of Wisconsin threw 20 field goals, lacking one of equalling world's professional record, in game of basketball with Beloit. Score, Wisconsin 80, Beloit 10.

Sunday, 8.—Choral Union produced the Messiah, under auspices of University Christian associations.

Monday, 9.—Senior class arranged for smoker, program to include addresses by prominent professors on university topics.—Names of patrons and patronesses for Junior Prom announced as follows: Gov-

enor and Mrs. Robert M. La Follette, President and Mrs. C. R. Van Hise, Dean and Mrs. E. A. Birge, Dean and Mrs. F. E. Turneure, Dean and Mrs. H. S. Richards, Mr. and Mrs. E. F. Riley, Senator and Mrs. John C. Spooner, Senator and Mrs. J. V. Quarles, Professor and Mrs. Paul F. Reinsch, Professor and Mrs. Victor Lenher, Professor and Mrs. Augustus Trowbridge, and Mr. and Mrs. W. D. Hiestand.—Committee on selection of football coach considered candidacies of Phil King, Folsom, present Dartmouth coach, and Place, coach at Ohio Wesleyan.

Tuesday, 10.—Dr. Lenher presented report of American Chemical society meeting, held at Philadelphia, before Chemical club.—Class in Race Elements of American Industry addressed by Mr. Bristow of Chicago.—Prof. Ettore Pais of Rome engaged for special courses during second semester.

Wednesday, 11.—Decorating contract for Prom let to Gimbel Bros., Milwaukee.—To prevent ticket scalping and long waits in line, management of Haresfoot play introduces mail order system for sale of seats.—U. W. Social club's series of dancing parties arranged to be chaperoned by Mr. and Mrs. T. H. Dickinson, Mr. and Mrs. L. D. Williams, Mr. and Mrs. O. B. Zimmerman.—Official statistics of American universities show Wisconsin to be tenth in point of numerical importance, enrollment being 3,221.—2,500 people heard Belgian violinist, Ysaye, in armory.

Thursday, 12.—Oratorical contest in Freshman "dec." won by H. H. Karrow of Milwaukee, representing Athenaeum Literary society; first place in dramatic section taken by Miss Josephine Peshak.—W. T. Toritz of Chicago Theological seminary spoke at Y. M. C. A.—Interfraternity hockey games planned.—Basketball team left on eastern trip.

Friday, 13.—Dr. A. S. Alexander, professor of veterinary science, addressed students at convocation on "Our Dumb Animals," showing that from economic standpoint it paid to be considerate of animals, that for intelligent care they return a better and longer service.—Announcement made that athletic association is still deeply

in debt.—A. H. Bushnell elected to vacancy on Athenaeum's semi-public team.—500 students skated on new rink.—New laboratory for course in home economics completed, and work in cookery began.—Minstrel show planned by senior engineers.

Saturday, 14.—Gymnastic team makes plans for regular biennial circus.—Naval ball in armory a brilliant function and netted \$150 for crews.—Bronze Key held semi-annual initiation.—The "Inner Gate," new sophomore honorary society, organized with following members. Walton D. Cary, George L. Draper, Allan C. Hibbard, James M. Hoyt, Paul B. Johnson, Henry H. Kimberly, John W. Leslie, Blake R. Nevius, Lewis L. Sherman, James F. Simpson, Arthur G. Sullivan, Walter S. Underwood, and William K. Winkler.—Sophomore athletes were awarded numerals.

Monday, 16.—Prof. Eliot Blackwelder, recently engaged in geological research in eastern Asia as paleontologist of Carnegie Institution, is secured as member of faculty in geological department.—Section of model of lead and zinc mine in geological museum received from St. Louis.—Illustrated talk on winter photography given by Dr. E. D. Angell at Camera club.—Dairymen victorious over '06 Short Course basketball team, score 30 to 17.—New Corliss engine in engineering shop started for first time.

Tuesday, 17.—Dr. Anderson, who attended 'varsity some 25 years ago, now head of physical training department at Yale, inspected gymnasium classes. He led first gymnasium class ever held at university.—Rhodes scholarship examinations began in Main Hall, G. Phair of Marquette college being the only man to take them.

Wednesday, 18.—Fred C. Thwaites of Milwaukee renewed his provision for a scholarship for a graduate of Milwaukee high schools.

Thursday, 19.—Intersorority bowling league formed.—Commercial club elected officers as follows: President, Louis Turner; vice president, R. W. Collie; secretary, C. W. Mills; assistant secretary, Andrew Playter; treasurer, J. G. Cary; board of directors, H. Wheelock, R. J. Neckerman, M. F. Hoefs; sergeant-at-arms, Leo

Cook, '05.—Library received valuable gifts of books from Prof. E. Kremers, Prof. A. W. Tressler and Dr. Reuben G. Thwaites.—Oratorical and Debating board decided not to accept Georgetown university's challenge for debate this year.—Organization of pre-medical society, "Caduceus," was completed.

Friday, 20.—Prof. John R. Commons of university faculty, formerly secretary of Civic Federation in New York, gave address at convocation on Public Employment, discussing civil service in American states and cities and its relation to the federal government.—Plans of conference committee for a revised constitution of athletic association made public, report being drawn up by special committee composed of Prof. J. F. A. Pyre, '92, Ralph W. Jackman, '97, John J. Moffatt, '05, Peter H. Schram, '06, and Harry Wheelock, '05.—Modern Language Association of America accepted university's invitation to hold annual meeting at Madison next December.—Joint debate between Short Course and Dairy students won by former, as affirmative of question: Resolved, that it would be good policy for the state of Wisconsin to license the butter and cheese factories of the state and to require the operators of such factories to obtain a license by examination.—Haresfoot club's presentation of "Hermione," a comedy drama by Thos. H. Dickinson of English department, was made a brilliant society event. Proceeds were given to University Social Settlement, Milwaukee.—T. W. Snow, Chicago manager of Otto Gas Engine works, lectured to engineering students on "Water Supply for Locomotives."

Saturday, 21.—Alumni association of Chicago in open letter urged students to stand by recommendations of faculty-alumni-student conference committee.—Town hockey players defeated team of fraternity players by score of 7 to 0.—Mrs. E. P. Allis, J. M. Pereles, Albert O. Trostel, W. H. Osborne and F. G. Bigelow, of Milwaukee, subscribed \$500 in order to provide annual prize of \$100 for winners of final oratorical contests, prize to be known as the Cream City Prize.—First engineering social of the year held in engineering

building.—Prof. H. L. Russell returned from Havana, where he attended American Public Health Association meeting.

Sunday, 22.—Basketball team returned from eleven-day eastern trip with two victories out of nine games played.

Monday, 23.—N. O. Whitney club victorious over U. W. Engineers' club in parliamentary law contest.—World's fair awards to College of Agriculture include three grand prizes as follows: For a dairy laboratory exhibit prepared by Prof. E. H. als given for exhibits prepared by Prof. A. Farrington; exhibit on dairy instruction and results of investigation prepared by Prof. E. H. Farrington; Babcock test invented by Dr. S. M. Babcock. Silver medal for Dr. E. P. Sandsten's exhibit.—Officers of university regiment went to Milwaukee to attend Wisconsin National Guard convention.—Student mass meeting took action toward complete reconstitution of athletic board.

Tuesday, 24.—Professors Reinsch, Scott, Frost and Turneure discussed Panama canal at Science club.—Dr. Edward Kremers read paper on "Perfumes" at Chemical club meeting.

Wednesday, 25.—Rev. Jenkin Lloyd Jones of Chicago filled second number of lecture course with lecture on The Cost of a Fool.—Lauro Lopez Mendez of Ampam, Hidalgo, entered college of engineering, being third student from Mexico to enroll this year.—Number of freshman crews cut from eight to five.—Germanistische Gesellschaft listened to Prof. E. C. Roedder's lecture on Niebelungen Lied.

Thursday, 26.—Seniors won three out of five games in handball tournament.—Work of Y. M. C. A. among Japanese soldiers explained at association meeting.—Battalion officers planned regimental party to be given April 1.—Winter dairy course closed.

Friday, 27.—Dean F. E. Turneure addressed convocation on The Engineering School in the United States.—University society largely represented at annual charity ball.—Prof. S. E. Sparling granted leave of absence for second semester in order to study methods of federal administration in Washington, Boston and New York.—

Charles J. Miller, '08, Arthur Kissling, '06, and Max King, '05, finished in order named in mile skating race.—Agricultural literary society elected following officers: President, A. Henry; vice president, A. Wallin; treasurer, C. P. Norgord; secretary, J. Torney; sergeant-at-arms, W. J. Mahoney.—Olympia chose officers as follows: president, H. J. Wichmann; vice president, A. J. Lewis; secretary, C. A. Tarr; critic, C. L. Richardson.—Kappa Alpha Theta celebrated fraternity birthday by entertaining alumni members.—“Skull and Crescent,” freshman honorary society, organized with following membership: R. A. Wood, W. T. Greenleaf, F. B. Bartlett, G. G. Wilder, B. G. Vreeland, W. B. Hartley, T. C. Farnese, R. B. Orr, L. H. Conger, R. C. Angell, M. F. Cudahy, S. M. Walmsley, V. K. Simpson, C. W. French, M. L. Thiermann, M. D. Rector, E. G. Gesell, F. N. Webster, C. N. Johnson, N. E. Carpenter, H. H. Grace, K. B. North, S. W. Heath, N. C. Kimball, Odd Meyer, James Carden, Ralph Wilson, J. B. Robertson.—Philomathia elected officers as follows: president, Daniel W. Hoan; vice president, Edward R. Jones; secretary William J. Morgan; treasurer, George Blanchard; censor, Charles Madsen; assistant censor, Albert Foster.—Hesperia elected following officers: president, Victor Griggs; vice president, Sidney Baker; secretary, Roland Petrie; censor, Arthur Van Hagen; assistant censor, Grover Huebner; treasurer, William Brindley.

Saturday, 28.—Course in Meteorology announced for second semester, under James L. Bartlett, observer at University weather station.—Third military hop held in armory.—Announcement made of course of lectures on The American City, by Dr. Frederic C. Howe, of Cleveland College of Law and Western Reserve university.—Dairy students' literary society upon disbanding for the year gave contents of its treasury to National Dairy Union to aid in suppressing fraudulent sale of oleomargarine.

Monday, 30.—Prof. George P. Baker, professor of English literature at Harvard, delivered lecture on “Lyly and his Influence on Shakespeare,” being first of series

on Shakespeare's Masters and his Stage.—Check for \$401.39, proceeds of Haresfoot play, sent to Rev. H. H. Jacobs, '93, warden of University Social Settlement.—Ralph Angell, '07; Arthur Wbod, '08; Jack Selmer, '06; H. C. Allen, '06; Lewis Chapman, '07; C. W. French, '08; Hugo Ernst, '07; and Robert Lea, '07, elected to membership in Haresfoot club.—O. R. Smith, '06, and Walter S. Underwood, '07, elected to membership on “Lit” staff.—Basketball squad resumed practice for Chicago and Minnesota games.

Tuesday, 31.—Edwin Booth and Red Domino Dramatic clubs decided to donate proceeds of Prom week play toward endowment of students' ward in Madison General hospital.—Baseball schedule, officially announced, will include 20 games.—Prof. Josiah Royce of Harvard lectured at Library hall.

FEBRUARY.

Wednesday, 1.—Phi Alpha Tau, honorary and professional fraternity, recently installed, general object being to stimulate oratory and dramatics. Present members are Prof. D. B. Frankenburger, Prof. H. B. Lathrop, A. H. Johnstone, '05, A. G. Arvold, '05, H. L. Geisse, '05, '07, J. E. Baker, '05, Max Loeb, '05, G. W. Blanchard, '06, P. H. Schram, '06, '07, Otto Breidenbach, '07.—Senior swing-out attended by 250 people.—Eben R. Minahan, '04, and W. Wehe, '04, representing law school, won handball championship by defeating R. T. Herdegen, '05, and E. B. Bartlett, '05, representing letters and science department.—Daily Cardinal awarded cash prizes to reporters and unsalaried editors.

Thursday, 2.—Fraternalities and other organizations drew boxes for Junior Prom.—Edwin Booth and Red Domino clubs adopted mail order system for seat sale.—F. L. Shinn, instructor in chemistry, engaged as assistant professor in physical chemistry in University of Indiana.—John W. Gannaway, fellow in political science, and William D. Kerr, scholar in economics, resigned to accept editorial positions in Milwaukee.—Incubator for study of bac-

teria, which thrive in the human system, was added to bacteriology and hygiene laboratory.—Forty-sixth student musical recital given at Library hall.—Prof. John R. Commons, of department of economics, has accepted invitation to deliver series of lectures at Harvard during coming semester.

Friday, 3.—Graduate club program, arranged by Home Economics department, included addresses by Dr. R. T. Ely, Dr. John R. Commons, Dr. Louis Kahlenberg and Miss Caroline Hunt upon problems which concern home life.—Board of athletic directors ratified two-years' foot ball

contract with Minnesota. Wisconsin will meet Minnesota at Minneapolis on Nov. 4.—Second year short course agricultural students visited Lovejoy stock farm at Roscow, Ill.—Phil King elected coach of football team and James Temple, track coach. L. A. Tarrell, '07, chosen student manager of football team.

Saturday, 4.—Prof. George C. Comstock left with family for seven months' European trip.

Sunday, 5.—President Chas. O. Day, of Andover Theological seminary, addressed student audience, presenting inducements for entering the ministry.

Athletics.

The Board of Directors of the Athletic Association met February 3, with only Bush, Prof. Bashford and Mr. Sanborn absent. Altogether the most important action of the meeting was the election of Phil King as coach of the 1905 foot ball team, which is the subject of editorial comment in another department. Mr. King will receive \$3,000 salary and \$250 for expenses.

The committee to recommend a track coach reported in favor of engaging James Temple, Jr., at a salary of \$500, with additional compensation of \$50, contingent on Wisconsin winning the dual meet with Chicago, May 13, and \$50 more if the team wins the meet with Illinois, May 20. The report was adopted and a contract embodying these terms authorized.

Graduate Manager Downer reported the conclusion of a two year foot ball contract with Minnesota, superseding the old four agreement which still had a year to run. The new contract provides for a game in Minneapolis, November 4, 1905, and one at Madison, in 1906, on a date to be mutually agreed upon. The other provisions are substantially as they have been in former contracts. The Board sanctioned the contract.

It was voted that the announcement of

all acts of the Board be left to the discretion of the graduate manager.

* * *

The track athletic and base ball schedules as now completed for the season are as follows:

TRACK ATHLETICS—INDOOR.

Feb. 25, Chicago at Chicago.
 March 4, Home Meet at Madison.
 March 11, Central Ass'n, A. A. U. Meet, at Milwaukee.
 March 18, Chicago at Madison.
 March 25, Michigan at Ann Arbor.

OUT-DOOR.

May 13, Chicago at Madison.
 May 20, Illinois at Champaign.
 May 27, Interscholastic Meet at Madison.
 June 3, Western College Conference Meet at Chicago.

BASE BALL.

April 17, Michigan at Madison.
 April 19, Michigan at Madison.
 April 22, Illinois at Madison.
 April 26, Beloit at Madison.
 April 29, Chicago at Madison.
 May 1, Notre Dame at Madison.

- May 3, Illinois at Madison.
- May 6, Chicago at Madison.
- May 10, Beloit at Beloit.
- May 11, Michigan Agricultural College at Lansing.
- May 12, Michigan at Ann Arbor.
- May 13, Michigan at Ann Arbor.
- May 17, Chicago at Chicago.
- May 18, Notre Dame at Notre Dame.
- May 19, Purdue at Lafayette.
- May 20, Illinois at Champaign.
- May 24, Beloit at Madison.
- May 27, Illinois at Champaign.
- May 29, Chicago at Chicago.
- May 30, Beloit at Beloit.

With the exception of the indoor meet with Michigan at Ann Arbor, March 25, and the base ball game with Michigan Agricultural College at Lansing, May 11, all these games were arranged by Manager Kilpatrick prior to his resignation.

* * * *

Wisconsin men who believe that athletics should be more sport and less drudgery will be interested to know that the project of a skating rink at the University has been successfully carried through this winter and is being patronized by a large number of students. The rink is located on Lake Mendota in the rear of the gymnasium and comprises a large area for skating, with a space for an eight-lap track for racing and two hockey rinks. Shelter tents are provided and the ice is kept clear of snow, and in good condition by being frequently flooded. The whole enterprise will cost, for the season, about \$900, which sum has been raised entirely by season membership tickets in the skating club and by a small admission fee for persons who are not members of the club. Races have been held from time to time and on Saturday evening the University band has been engaged to furnish music. It is a matter of regret that more interest cannot be developed in hockey, a grand winter sport, which has thus far failed to win much support. The rink, however, has proved to be a beginning in creating an interest in skating and it is expected that in another year it will be possible to organize a class or fraternity hockey league and

eventually to raise the game to the status of an intercollegiate sport.

* * *

The gymnastic team has now been in training nearly a month and the men are showing excellent form. This year's meet of the Western Interscholastic Gymnastic Association is to be held at Chicago early in April. Mr. Angell, instructor in gymnastics, is of the opinion that Wisconsin will be represented by an excellent team, which will be especially strong in tumbling and on the horizontal bar. The candidates for the team include the following: Captain J. R. Blaine, J. H. Stearns, A. L. Persons, F. Hunt, R. W. Rogers, D. R. Sperry, E. J. Noe, H. A. Parker, P. H. Schram, S. B. Atwood, F. S. Zeidelhack, L. J. Davila.

It is generally believed that the 1905 meet will be an unusually interesting one and closely contested as a number of new schools have indicated their intention of entering teams, the new members including Notre Dame, Northwestern and Nebraska. Wisconsin, Minnesota, Grinnell and Chicago will be in as usual.

A circus has been planned, to be held in the Armory about the middle of March, to raise funds for defraying the expenses of the team on the Chicago trip.

* * *

Candidates for the 'varsity crew were called out on January 10th and since that time thirty-three have been working regularly, twice a week, on the machines and running and doing general gym work on the intervening days. The list is as follows:

	Age.	Wt.	H.
Leuders, W. J.	20	162	5:11
Miller, D. W.	24	187	6:1½
Zappfe, C.	24	155	5:10
Hatton, A. W.	21	160	6:0
Krape, W. G.	22	170	5:11¼
Ryder, G. G.	27	165	6:0
Walbridge, J. S.	19	160	6:0
Leslie, J. W.	18	163	6:4
Stearns, E. W.	21	166	5:11
Wyman, J. B.	23	150	5:11
Van Meter, T. E.	21	172	5:9
McComb, R. K.	19	170	5:11
Berto, J.	21	177	6:1

Gorman, E. P.	21	171	6:0
Bechlem, A. W.	23	155	5:11½
Boyle, A. C.	22	158½	5:11
Johnson, G. M.	20	181	5:11
Reed, C. S.	21	156	5:11
Miller, A. H.	20	174	6:0
Robbins, A.	20	150	6:0
Foster, D. E.	21	168	6:0
Barker, C. P.	20	169	6:1
Burling, B. B.	21	164	5:11
Johnson, F. E.	20	164	6:0¾
Davis, B. F.	20	195	6:1
Coonen, J. F.	24	176	5:10½
Larson, L. P.	21	184	6:0
Kennedy, F. A.	26	157	5:10½
Conway, W. M.	24	160	5:10
Cortelyou, G. S.	21	161	5:10
Hine, G. S.	20	165	6:0
Heyroth, A. H.	20	165	6:0
Hetzl, R. D.	21	175	6:0

The freshman squad was cut to forty men on January 25th, the names of the fortunate ones who were retained, with their weights, being given below:

Schlapkohl, 160; Schleifer, 159; Cooper, 161; Hatch, 159; Huntley, 182; Hoffman, 180; Wilder, 160; Whittaker, 162; Sheldon, 147; Gorman, 154; Hoehe, 160; Hume, 175; Girdley, 176; Berto, 165; Ruth, 164; Brenton, 161; Ball, 151; Chapin, 153; Wallber, 160; Walmsley, 168; Conlin, 140; Blatz, 167; Osborne, 140; Bartlett, 149; Cooper, 152; Van Loon, 156; Rawlings, 158; Musser, 163; Tollefson, 170; Knuppel, 147; Sherman, 135; Weir, 144; Swede, 162; Krauthoefer, 170; Burch, 149; Hoffman, 160; Johns, 164; Witts, 167.

Coxswains: Karrow, 116; Goldsmidt, 112; Phelps, 107; Peck, 115; Merrill, 116; Reed, 115; Simpson, 104; Engelhoff, 117; Mott, 114; Shetts, 108; Farnesse, 110; Greenleaf, 108; Fay, 106.

* * *

The annual hand-ball tournament was concluded on February 2nd, when E. R. Minahan, '05, and W. L. Wehe, '05, won from E. B. Bartlett, '05, and R. T. Herdegan, '06, 21-9; 21-14; 17-21; 9-20; 21-19. Interest in hand-ball never seems to flag at Wisconsin. The six courts in the base ball cage are in constant use all the afternoon right up to the closing hour,

as well as during a considerable portion of the morning. This is another of the few forms of athletics in the University which is liberally supported purely as a sport and a recreation, without any semblance of an intercollegiate character.

* * *

The base ball team will begin practice Monday, February 20, with, it is hoped, every man of last year's team among the candidates. There is a possibility that Roys may decide not to play this year, but with this exception and the assumption that the men are all successful in their examinations, Coach Pierce will have a veteran team to handle this spring. Of the new men, little is known. Cummings, a freshman, has had some excellent experience with the Duluth high school and at Phillips Andover. He is a pitcher and infielder. St. Germaine, who played on the foot ball team last fall, is reputed to be an excellent first baseman. Several other men come to the University with something more than local reputations.

* * *

Manager Kilpatrick's financial statement referred to last month is as follows:

Jan. 23, 1905.

"Editor Daily Cardinal,

Madison, Wisconsin.

Dear Sir:—

Enclosed find statement of the Athletic Association for the period covering February 24th, 1904, which was the date of previous audit till December 24th, 1904, the date of last audit. In explanation of the account called general, as mentioned in receipts and disbursements, the receipts consist of loans made since previous audit but does not include two loans of \$1,000 each, which were negotiated before said audit. General disbursements consist of all loans and notes paid, aggregating \$9,189.34 including interest, as well as graduate manager and assistant's salaries, also \$1,817.01 paid for improvements made to Camp Randall the past season and such miscellaneous expenses as would come under this head.

There is due the Athletic Association \$500.00 or more for board from 1903, spring season, and 1904, fall season, the

amounts which can be had of Mr. Downer for 1903 and Mr. Minahan for 1904. I take this opportunity of stating I never gave out any wrong impression as to the financial condition of the Athletic Association. authorized and paid after my accounts were audited and found correct by the committee. I trust that this statement will serve to enlighten everybody as to the exact condition of the Athletic Association, as I left it.

Very truly yours,
C. H. Kilpatrick.

Disbursements, 1904.

Football	\$8,661 29
Crew	4,042 21
Baseball	1,454 00
House	4,183 77
Track	742 25
Basket ball	32 50
General	14,780 33
Balance	2,045 38
	<hr/>
Total	\$35,941 73

Receipts.

Football	\$27,631 25
Crew	2,295 95
Base ball	1,057 43
House	297 93
Track	351 53
General	4,327 64
	<hr/>
Total	\$35,941 73

Dec. 24, 1904—Bal. in hand of treasurer, \$2,045.38."

Graduate Manager Downer supplemented this with a report showing the actual present condition of the association finances, the most important part of which is here quoted from the *Daily Cardinal*.

"After the time of the recent audit, December 24, 1904, and prior to the date, January 1, 1905, when I began drawing warrants, there was received from various sources \$98.38 and paid out, on warrants drawn by Mr. Kilpatrick, \$1,527.35. Since January 1, there has been paid out on my warrant \$362.67, which, added to the amount paid by Mr. Kilpatrick, just referred to, makes the total disbursements

since the last audit, \$1,890.02, leaving a balance in Mr. Riley's hands at the close of business January 24th of \$253.74. The accompanying memorandum statement shows the present condition of the Association on the basis of the bills which have thus far been presented and the amounts which are due the Association, both the bills and accounts due being assumed to be correct and good. As a matter of fact, this is an approximation rather than an exact statement, as a number of other bills, the amounts of which I do not know, have not yet been presented. There are other resources in the way of accounts payable but I do not know what they amount to, probably but a small sum.

Under the existing system, whereby the authority to spend money and incur indebtedness may be divided between the graduate manager and various other persons, it is practically impossible for him to keep books or to know exactly how the Association stands. Others than himself, acting perfectly within their authority, may run up bills of which he knows nothing, the transactions perhaps first coming to his knowledge when he is called upon to sign warrants on the treasury for the payment of the bills. With this division of financial authority and responsibility, no accurate or adequate system of accounts is possible, and no permanent improvement in the finances can reasonably be expected. This is a matter which the recent joint conference failed entirely to consider and unless it is taken up and effective remedies proposed by the constitutional committees which are to make their concurrent report to the annual meeting next month, there will be little use in their suggesting other changes which do not get at this, the root of our financial difficulties.

The memorandum statement which I have made out is to the close of business January 24th.

Following is the statement:

Memorandum Statement, Jan. 24, 1905.

Liabilities—

Bills on file	\$4,098 62
Bills known but not presented...	265 68
Outstanding warrants	7 00

Salaries due today	40 00	Net indebtedness	3,650 13
Total	\$4,411 30	Total	\$4,411 30
Resources—		GEO. F. DOWNER,	
Cash in treasury	\$253 74	Graduate Manager.”	
Cash held by Geo. F. Downer..	68		
Due from G. S. McConochie, ad-		It will be noted that practically all of the	
vanced for eastern trip	150 00	present indebtedness was contracted before	
Due from various sources, con-		January 1, 1905, and that at the time when	
sidered good	356 75	former Manager Kilpatrick's statement	
		showed a cash balance of \$2,045.38, the	
Total	\$761 17	Association owed nearly \$6,000.	

Alumni

Alumni are requested to contribute to this department. When newspaper clippings are sent, care should be taken to indicate date and place, clearly. Distinguish between date of paper and date of event recorded. Report all errors promptly. The notation used in this department is as follows: Two figures preceded by an apostrophe indicates the year of graduation. Two numbers separated by a dash indicate the period of residence of a non-graduate. Where only figures are given the college of letters and science is indicated; e stands for engineering department; l, law; p, pharmacy; h, higher degrees; (Hon.) honorary. Addressed envelopes will be furnished to any one who will use them regularly to send news to this department.

Wisconsin alumni in Green Bay have taken a leading part in organizing a University club which is composed of persons in that city who have spent at least one year in some college or university granting the baccalaureate degree. The purpose of the club is to furnish entertainment and to promote an interest in higher education in the community. The club is the direct outgrowth of a suggestion made last spring when subscriptions were being solicited for the University Jubilee that the Green Bay alumni of the University of Wisconsin organize a club. There did not, however, seem to be a sufficient number of graduates in the city to justify an organization restricted to Wisconsin alumni and the present University Club is the result. The first banquet of the club was held Saturday evening, January 28th. President Van Hise addressed the members. The officers are W. L. Evans, president; S. P. Huntington, vice president; Miss Louise Hinckley, secretary; George Ellis, treasurer; Mrs. S. H. Cady, B. L. Parker, and the Rev. J. C. Hazen, directors. Of these W. L. Evans, S. P. Huntington, Miss Louise Hinckley, Mrs. S. H. Cady and B. L. Parker are graduates of the University.

'65

E. D. Bronson, formerly a member of the class of '65, is engaged in the wholesale book business at 319-321 Phelan Bldg., San Francisco. He resides at 82 Monte Vista Av., Oakland, Cal.

'69

Notice is received of the death of Mrs. Judson Pierce (Miss Ella Ursula Turner, '69), on November 30, 1904, at her home at Spokane, Wash.

W. C. Damon, '69, '74h, is living at Fruitvale, California, a suburb of San Francisco.

'71

Dr. Charles N. Gregory, '71, has a contribution in the *Columbian Law Review* on "The Locus of Sales, C. O. D.," which has attracted considerable favorable comment.

'72

Edward T. Sweet, '72, is a stockman at Menno, S. D.

'74

Charles A. Wilkin, '74, is engaged in the practice of law at Fairplay, Colo.

'75

Julian C. Jaynes, '75, is a clergyman at West Newton, Mass.

'76

Stoddard Jess, '76, is a banker at Pomona, Cal.

Oliver Matthew, '76, is mining engineer at Galena, Kan.

'81

Charles E. Sawyer, '81, is engaged in the newspaper business at 341 Main street, Portland, Oregon.

'82

Dr. Caleb N. Harrison, '82, died at his residence in Madison some weeks ago. Dr. Harrison was born in Milwaukee, being the son of Caleb Harrison, one of the pioneers of that city, and at the time of his death was forty-three years of age. He graduated from the East Division high school in that city and from the University with the class of '82. Later he engaged in graduate study at Johns Hopkins University where he was awarded his doctor's degree. He was appointed professor of machine design, at Wisconsin, which position he resigned in 1899 to accept a position as constructing engineer in the United States navy at Portsmouth, N. H. This position he was able to retain only six months, being compelled to resign on account of ill health. He returned at once to his home in Madison. Dr. Harrison was regarded as one of the leading mathematicians in the country. His research work in the line of arc spectrum, in connection with Dr. Henry A. Rowland of Johns Hopkins University, attracted considerable attention in the scientific world. Dr. Harrison is survived by his wife, who was Miss Lucia Pauline Herfurth, and a daughter, Miss Edna, who is a senior in the University.

Ewing L. Patterson, '82, resides at Terre Haute, Ind.

'83

Conrad M. Conradson, '83e, is connected with the American Turret Lathe Co., Wilmington, Del.

Melvin A. Hoyt, '83, who for a number

of years was Madison correspondent for several metropolitan dailies, is managing editor of the *Milwaukee Daily News*.

'85

Fred W. Stevenson, '85, who has the distinction of having invented the "U, Rah, Rah," yell of the University of Wisconsin, is engaged in the practice of law at Menominee, Mich.

Rodell C. Warne, '85, is a physician at Mitchell, S. D.

'89

Notice is received of the marriage of Miss Jessie Morey Bell, '89, to Mr. George La Monte Woodard at Evanston, Ill., on Saturday, October 1st, 1904. Mr. and Mrs. Woodard are at home at 1587 Broadway, Beaumont, Texas.

Winfield R. Smith, '89, is a member of the firm of Shank & Smith, Seattle, Wash.

'90

Dr. Sidney D. Townley, '90, delivered a lecture before the Astronomical Society of the Pacific at the lecture building of the Academy of Science in San Francisco, November 26th, on "The Movement of the Earth's Axis." Dr. Townley is connected with the International Observatory at Ukiah, Cal.

Frederick W. Stearns, '90, is engaged in the practice of law at San Diego, Cal.

Dr. John L. Sheppard, '90, is assistant United States surgeon at Fort Presidio, San Francisco, Cal.

'91

William J. Thayer, '91, is practicing law at Spokane Falls, Wash.

'92

Edward H. Ahara, '92, is superintendent of the Dodge Manufacturing company, Mishawaka, Ind.

'93

Clarke B. Rosecrans, '93, '94l, is practicing law in Milwaukee in partnership with Charles P. Spooner, '94l. The firm has offices in the Wells Bldg.

'94

Foster Lardner, some time a member of the class of '94, is playing the leading juvenile role in Blanche Walsh's new play, "A Woman in the Case," by Clyde Fitch. Mr. Lardner is a former resident of Oconomowoc. In the early part of the season he played Vladimar Simonson in Wagenhal's & Kemper's production of Tolstoi's "Resurrection."

'95

George H. Burgess, '95e, is assistant engineer of the Pennsylvania lines west of Pittsburg. His address is Union Station, Pittsburg, Pa.

'96

George E. O'Neill, '96, is traveling for the National Lead company out of St. Louis, Mo. He has for his territory Missouri and Arkansas.

C. M. Smith, '96, and Mrs. Smith, who was Miss Harriet L. Goetsch, '97, spent the last summer in Europe. Mr. Smith is assistant professor of physics at Purdue University.

Announcement is just at hand of the marriage of Judge William J. Conway, '96, of Grand Rapids, Wis., to Miss Hannah McGrath of Waupaca, on Thursday, January 26th. Judge and Mrs. Conway will reside at Grand Rapids after March 25th.

L. K. Chase, '96l, is practicing in Los Angeles, Cal.

J. T. Drought, '96l, is practicing in Milwaukee, his office being in the Herman Bldg.

'97

Henry Lockney, '97, who was a member of Athena's victorious 1895 joint debate team, with Henry Cochems, '97, and G. H. Miller, '96, is practicing law in Waukesha.

Miss Marietta B. Smith, '97, is assistant principal in the high school at Lake Geneva.

'98

Leroy Thomas, '98, who is in the service of the Census Bureau at Washington, spent several weeks in San Francisco this winter in the service of the department.

Born to Mr. and Mrs. Eugene C. Noyes August 1, 1904, a daughter, Winifred Beatrice. Mr. Noyes was a member of the class of '98 in the civic historic course from 1894 to 1897, and at present resides at Minneapolis, Minn. He is practicing law at 603 Guaranty Bldg.

Born January 5, at Redding, Conn., to the Rev. and Mrs. Louis A. Goddard, '98, a daughter, Mignonne Walbridge Goddard. Mrs. Goddard was Miss Fannie Walbridge of the class of '95.

E. L. Hancock, '98, is instructor in applied mechanics at Purdue University, Lafayette, Ind. Mr. Hancock was married to Miss Agnes Bixby of Evansville, Ind.

George B. Nelson, '98, resides at Amherst.

'99

William C. Wilson, some time a member of the class of '99, is the San Francisco representative of the Anthony & Scovill Co. of New York with headquarters at Gallagher Bros., 27 Grant Ave.

Louis M. Reed, '99, '02l, is practicing law in Oshkosh. Mrs. Reed was Miss Madge Thompson, of the class of 1902.

Joseph Bredsteen, '99, known to followers of Wisconsin athletics as one of the greatest distance runners the University ever had, and a former captain of the track team, is engaged in newspaper work in Eureka, Cal.

Leo Sexton, some time a member of the class of '99, is in the advertising department of the *Sunset Magazine*, published in San Francisco.

C. A. Sidler, '99l, is practicing in Milwaukee. He resides at 914 Cedar St.

John M. Barr, '99, is an engineer in the employ of the Westinghouse Electric Co., Pittsburg, Pa.

'00

Frank L. McNamara, '00l, district attorney of Sawyer county, appeared before the legislative committee on town and county organization in the interest of a bill relating to a lively contest in his district.

Thomas R. Cook, '00e, is in the employ of the Pennsylvania railroad, and is located at Ft. Wayne, Ind.

Dr. Bernard C. Dorset, '00, who graduated last June from the medical department of the University of Pennsylvania, is now serving fifteen months as residence physician in the St. Agnes hospital, South Broad St., Philadelphia.

Francis H. Crosby, '00, is in charge of the commissary department of the Alaska Central Railway. His address is at Seward, Resurrection Bay, Alaska.

Mrs. Fred A. Fish, who was Miss Annie Knower Caulkins' '01, has removed her residence from Columbus, Ohio, to Ames, Iowa, where Professor Fish has accepted a position in the Iowa State Agricultural College.

James B. Graham, '01, is located at Roberts, Wis.

Miss Winifred Salisbury, '01, has accepted a position in the Evansville schools for the remainder of the year in place of Miss Ethel Baker who was granted a leave of absence on account of ill health.

Fred C. McGowan, '01, for a time in newspaper work in Milwaukee and recently in the lumber business in the far west, was in Madison in December.

Hylon T. Plumb, '01, is a member of the electrical engineering faculty of Purdue University.

Carl F. Geilfuss, '01, has established an office for the practice of his profession in Milwaukee at 704 Herman Bldg.

'01

Warren D. Smith, '01, who has been taking graduate work in geology at Leland Stanford and Chicago Universities for the last two years, was the only successful candidate in the recent civil service examination for the position of economic geologist in the Philippines. Mr. Smith sailed for the Philippines from New York, January 21, 1905, and will begin his research work at an early date.

Mr. and Mrs. Richard Williamson, '01, reside at Mexico City, Mexico, where Mr. Williamson is assistant secretary of the Y. M. C. A. Mrs. Williamson was Miss Francis May Wilcox, '01.

Ray Palmer, '01, is assistant chief engineer of the Chicago Traction Company. His address is 1010 Winona Ave., Chicago.

Byron H. Stebbins, '01, is practicing at Green Bay. Mr. Stebbins was married to Miss Florence Hastings, daughter of Judge Samuel D. Hastings, last June.

William C. Burdick, '01, is engaged in business in Chicago and resides at Harvey, Ill.

Ericsson W. Allen, '01, resides at La Junta, Colo.

Chester B. Barnes, '01, is practicing law in Kenosha.

Harry E. Bradley, '01, '04, is now practicing his profession in Milwaukee. He resides at 235—10th St.

William J. Carr, '01, '03, is U. S. prosecuting attorney at Manila, P. I.

Mrs. Fred Pollard, who was Miss Melvina Ruth Ellsworth, '01, resides at Marshfield.

Mrs. Walter Jensen, formerly Miss Caroline Evans, '01, resides at Mattoon, Ill.

Miss Leeta A. Harvey, '01, daughter of former State Superintendent L. D. Harvey, resides at Menomonic, Wis.

Robert A. Maurer, '01, is studying law in the Columbian University, Washington, D. C.

Mark H. Newman, '01, is engaged in business at Platteville.

Mrs. Arthur Conley, who was Miss Clara Pfisterer, '01, resides at Spokane, Wash.

Edward J. B. Schubring, '01, has become associated with the Hon. Burr W. Jones in the practice of law in Madison under the firm name of Jones & Schubring.

John M. Verberkmoes, '01, who graduated from Rush Medical College, after leaving Wisconsin, is resident physician to the Arnhourt Hospital, Blackwells Island, New York.

W. A. Walker, '01, is practicing law with his father at 213 Pabst Bldg., Milwaukee.

Clarence J. White, '01, is studying law in the Harvard Law School.

'02

Harry G. Kemp, '02, has given up his law practice in Rhinelander to take up the work of an insurance adjuster for a number of leading companies in Minnesota, Wisconsin and Upper Michigan. He has his headquarters at Minneapolis.

Harry W. Cole, '02e, is in the employ of the Allis-Chalmers Co. His address is 609 Collins Ave., Pittsburg, Pa.

George W. Briggs, '02, has been appointed to a scholarship in Hebrew and Hellenistic Greek in the University.

Miss Laura E. Sage, '02, of Delavan and Mr. Bernard L. Jones of Oregon were married at the bride's home on October 12th and will reside at Oregon, where Mr. Jones is manager of the Independent Telephone Co.

W. S. Bardwell, '02l, is in the employ of Sears, Roebuck and Co., Chicago.

Announcement is at hand of the marriage of Miss Charlotte Ehrlich, '02, of Berlin to E. G. Herrell, of Augusta. The wedding occurred during the summer at the home of the bride's parents. Mr. and Mrs. Herrell will reside at Augusta, where Mr. Herrell is editor and proprietor of the "Augusta Times."

B. D. Richardson, '02, continues this year as an instructor in the South Side high school of Manitowoc. His residence address is 930 S. 7th St., Manitowoc.

J. Bartow Patrick, '02, visited recently in Madison at the Beta house. He is at present principal of the high school at Ironwood, Mich.

R. A. Nestos, '02l, is practicing law at Minot, N. D.

'03

W. R. Mott, '03, who specialized in applied electro-chemistry, has resigned his position with the Carborundum Company of Niagara Falls to take charge of the experimental work in the development of a new electro-chemical process in operation in Pittsburg, Pa.

Joseph T. Flint, '03, is advertising manager of the *Wisconsin State Journal* of Madison. During the past year Mr. Flint has been associated with his father in the publication of the *Dunn County News* of Menomonie, Wis.

Paul R. McKee, '03l, business manager of the *Whitewater Register*, attended the editorial convention at Madison.

R. M. Chapman, '03, is in the employ of the St. Louis Smelting and Refining Co. His address is Desloges, Mo.

John E. Tracy, '03l, has entered into a law partnership with Arthur C. Neville in Green Bay. The new firm has its offices in the Parmentier Block. An interesting coincidence arises from the fact that thirty-five years ago the fathers of the two men formed a similar partnership under the same firm name.

Miss Elizabeth Shepard, '03, is a teacher of English in the Sheboygan high school.

R. H. Hollen, '03, former business manager and editor of the *Daily Cardinal* has entered upon his second year at the Harvard Law School.

Herbert F. John, '03, is on the staff of the *Review of Reviews*. In the January number of that magazine appeared an article by him entitled "Pittsburg's Business Opportunities."

Orlando H. Frick, ex-'03, is division engineer on a new road, the Missouri, Oklahoma & Gulf, now building through Indian Territory.

H. G. Milbradt, '03, and L. F. Rahr, '03, are members of the faculty of the North Side high school at Manitowoc.

At the home of the bride at 612 I Street, Tacamah, Wash., December 24, Christmas Eve, was solemnized the marriage of Fred G. Borden, for some time a member of '03e, and Miss Ruby Loomis. Mr. Borden is a successful electrical engineer in Tacamah. After December 29th, Mr. and Mrs. Borden will be at home at 251 C. St., Tacamah, Wash.

Seth B. Richardson, '03l, is engaged in the practice of his profession at Kenmare, N. D.

B. O. Skrivseth, '03, is principal of the Annetta, N. D., schools.

'04

Francis H. Kales, for two years a member of '04, is traveling in Europe. He will visit Egypt, as well as England, Scotland and the continent. Mr. Kales graduated from Massachusetts Institute of Technology.

F. K. Carrico, '04, was married to Miss Mabelle Jane Miller at Rockford, Ill., February 11.

Morris W. Moe, '04, R. G. Sears, '04h, and Arthur L. Breslich, '04h, have been

appointed to scholarships in the department of Hebrew and Hellenistic Greek in the University.

Horatio Winslow, '04, who was prominent in University dramatics and took a leading part in college journalism throughout his course, is studying art in San Francisco at Partington's School of Illustration. His residence address is 824 Eddy Street.

Ben A. Paust, '04, is special agent for the Fidelity and Casualty Company of New York in the branch office of the company at 512-516 Wells Bldg., Milwaukee.

William M. Baxter, some time a member of '04, resides in Nashville, Tenn., where his address is 305 S. Belmont Ave.

J. B. Blake, '04, is studying law at the University of Chicago.

M. A. Whiting, '04e, is holding a responsible position in the service of the recently organized Marion-Bucyrus Railway and Light Co.

John Lord, '04, entered the Harvard Law School this fall.

R. G. Griswold, '04, is at present located at Denver, Colo., where his address is 1068-9th St.

Louis F. Musil, '04, is in the employ of the Laclede Gas Light Co., Station A., St. Louis, Mo.

L. R. Davies, '04, is chemist for the great sugar beet factory at Menomonie Falls, Wis.

Don E. Giffin, ex-'04, was married at Shawano, Wis., to Miss Rhoda Wirth. They will live at La Crosse. Mr. Giffin is a son of Judge and Mrs. N. C. Giffin of Fond du Lac.

George R. Gove, '04, is an instructor in Greek at the St. John's Military Academy De: field, Wis.

Miss Marie G. Miller, '04, is teacher of English and elocution in the Manitowoc North Side high school.

John B. Andrews, '04, is assistant in economics in Dartmouth College. His address is 2 Elm Street, Hanover, N. H.

Book Reviews.

PROFESSOR LEITH ON ROCK CLEAVAGE.

The United States Geological Survey has just published an interesting monograph on "Rock Cleavage" by Professor Charles K. Leith of the department of geology of the University. This volume, which embodies the result of a very careful and laborious investigation of facts concerning rock cleavage and a discussion of their theoretical significance, will be of material assistance to all interested in structural geology.

Cleavage is commonly defined in geological text-books as a structure by which some rocks part or break along certain parallel planes more easily than along others. A considerable proportion of the rocks of the earth's crust possess lines or planes of parting, which are either original or secondary; that is, they were either induced in the rock during its solidification

from a magma or during its deposition in water, or they were induced by deformation through metamorphic processes subsequent to the formation of the rock. Generally, in discussions, the secondary structure only has been considered as cleavage, but Dr. Leith believes that there is no essential difference between the original and the secondary structures, and that the term rock cleavage should be applied to both. As used in this paper, therefore, the term cleavage is confined to structure, and has no significance as to origin.

It is fundamentally assumed that secondary cleavage is of two kinds, which are widely different in their essential causes and conditions. The form of cleavage which develops during rock flowage, or the deformation of rock without conspicuous fracture, is called by Dr. Leith *flow cleavage* and is discussed in the first part of his paper. The other form of rock cleavage, which develops through the deformation of

rock by fracture and subsequent cementation, is denominated by Dr. Leith *fracture cleavage* and is the subject of the second part of this bulletin. Original cleavage of bedding and flow structure are treated independently in Part III. Heretofore one of the principal causes of confusion in the discussion of cleavage has been the attempt of some authors to make the explanation of one kind of cleavage apply to all kinds. Dr. Leith lays especial emphasis on the proof that incipient or cemented parallel fractures, yielding what he calls fracture cleavage, will not explain what he calls flow cleavage, or cleavage dependent upon the parallel arrangement of the mineral constituents. To show this he discusses in detail the internal arrangement of the mineral constituents of rocks that is peculiar to each kind of cleavage, the relations of this arrangement to the observed cleavage, the nature of the processes that bring about the arrangement, and the relations of the arrangement to pressure. He points out that there is need of systematic microscopical study of cleavage of rocks of all kinds from many localities for the purpose of ascertaining the exact arrangement of the mineral particles, the relation of the observed arrangement to cleavage, and the relations of cleavage to the deformation of rocks. In the present paper Dr. Leith has made an attempt to supply in some degree this observational deficiency.

THE WATER RESOURCES OF THE PHILADELPHIA DISTRICT.

The water resources of Philadelphia and vicinity, including both surface and underground waters, are discussed by Dr. Florence Bascom, '82, in a recent publication of the United States Geological Survey. The area covered by Dr. Bascom's paper has been mapped on the Germantown, Norristown, Philadelphia, and Chester atlas

sheets of the Survey, which are combined together and published as a map of Philadelphia and vicinity. This district, which embraces a population of nearly 2,000,000, comprises in whole or in part ten counties — Bucks, Montgomery, Philadelphia, Delaware, and Chester counties in Pennsylvania; Burlington, Camden, Gloucester, and Salem counties in New Jersey; and Newcastle county in Delaware.

The topography, rainfall, run-off, and stream discharges of the chief hydrographic basins in this area, the geology and water-bearing horizons, and the water power and water supply in relation to present and future utilization are some of the subjects discussed by Dr. Bascom. Part of the data for that portion of the paper which deals with surface waters has been collected from scattered and inaccessible publications and is presented with new material. The facts relating to underground waters are largely new and are the result of a personal canvass of the region.

That part of Dr. Bascom's paper which describes the public water supplies of the district is of most general and practical interest. The consumption of water in Philadelphia is said to be greater per capita than in any other city of the United States, and the amount of water used throughout the whole Philadelphia district is enormous. In the absence of conditions favorable to storage it is natural that, in the larger communities, the rivers should be drawn on as a source of supply. In the smaller towns, however, where the demand is not so great, wells and springs sometimes constitute the principal supplies.

Dr. Bascom's report, which is listed as Water-Supply and Irrigation Paper, No. 106, is published for free distribution, and may be obtained on application to the Director of the United States Geological Survey, Washington, D. C.