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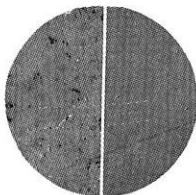
VOL. XXIV.

APRIL, 1920

NO. 7

Keeping Kerosene out of the Crank Case

Used oil as seen through the microscope. Note the grit and punctures in the film.



Fresh oil as seen through the microscope. Note the smooth unpunctured film.

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Volume 24

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Number 7

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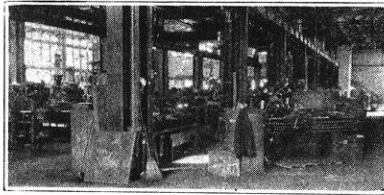
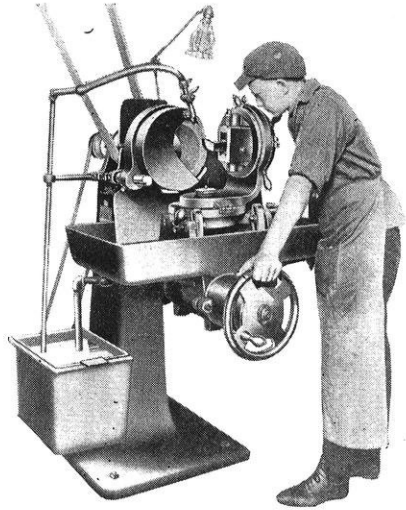
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The Wisconsin Engineer

VOL. XXIV.

APRIL, 1920

NO. 7

ALUMNI LETTER, 1920.

April 5, 1920.

To the Alumni, College of Engineering:—

In preparing this alumni letter, it has occurred to us that the items of news of especial interest to the alumni are so numerous and important that it would be well to make the letter a



DEAN TURNEURE

part of a special issue of the Wisconsin Engineer, and to send copies of this issue to all engineering alumni. We trust that this arrangement will result in conveying to the alumni more college news of interest to them, and will, on the other hand, enlist an increased interest in what is going on in the college. Another factor in this arrangement is to call the special attention of alumni to the prosperity and the excellent character of the Wisconsin Engineer.

The most striking feature to report concerning the work of the present year is the extraordinary increase in attendance. In common with nearly all other engineering schools, the entering class largely exceeds any previous freshman class, being about double the normal number for the years immediately preceding the war. The sophomore class is also relatively large, having been augmented by a large number of students entering with advanced standing. The upper classes are still slightly below the pre-war average, but are much larger than we had anticipated, owing to the great number of students returning to the University from war service; for it appears that war experience has only increased the

desire on the part of college students to finish their courses. The result of all this great activity in engineering education is the overcrowding of engineering schools throughout the country, and this University, like many others, is confronted with the serious problem of the expansion of facilities. Should our freshman class be maintained at present numbers (about 475) for three or four years, it will mean an attendance in the Engineering School of about 1,500, or double the pre-war normal.

It is also interesting to note that, in addition to the students in our own freshman class, there are about one hundred prospective engineering students now pursuing their first year's work at various normal schools and colleges of the state. Most of these will enter here later, adding largely to the ranks of the sophomore class. The problems involved in this very rapid growth, especially in the laboratory work of the upper classes, can be well appreciated by alumni.

For the current year, the increase in attendance has called for additional instruction, mainly in the Drawing and Shop departments. Four instructors have been added in the Drawing Department, and this work has proceeded as usual; but in the Shops the space and equipment are so limited that a makeshift arrangement has been used, whereby some of the shop practice has been replaced with lectures,—an undesirable arrangement. In departments dealing mainly with upper classes, a considerable addition to the faculty has been made, restoring the teaching staff to approximately pre-war figures.

The securing of competent instructors this year has been very difficult, owing partly to the small numbers of graduates during the past two or three years, and partly to the extraordinary industrial activities with accompanying high salaries. Under the circumstances, we have been fairly successful, and have not seriously suffered in any department for lack of help. Fortunately, the Regents have been able to increase the salary scale for instructors to a figure corresponding fairly well to salaries outside, and ranging generally from \$1,500 to \$2,000 for nine months' service. While it has been thus possible to maintain adequate numbers in the teaching staff, we have been obliged, in some departments, to make use of too many instructors of limited experience. This must be remedied as fast as funds will permit.

The changes in the faculty, among men of professorial rank, have been of considerable importance during the year. In the Electrical Engineering Department, Professors M. C. Beebe and R. C. Disque, who were on leave of absence during the war, resigned, Professor Beebe going into industrial work, and Professor Disque taking the chairmanship of the Electrical Engineering Department at Drexel Institute. Resignations have also been received from Professor Shuster and from two of the experienced instructors of this department. These vacancies have been filled in part by the appointment of Assistant Professor J. O. Kammerman, formerly of Pennsylvania State College, and by the employment of additional instructors. Professor C. M. Jansky, of the Extension Division, is now giving considerable time to teaching in the Electrical Department. Assistant Professors Watson and Price have been promoted to Associate Professors. In the Hydraulic Department, we are glad to welcome back Professor Corp from his work in the sanitary service of the Army. An additional instructor has been employed in that department for the second semester. In the Machine Design Department, the resignation of Professor Keown has been in part made good by the appointment of Assistant Professor Miller. Professor Hyland is now in charge of that department. Professor Goddard, Superintendent of the Shops, has been on leave of absence during the current year, and Assistant Professor Dabney has been acting superintendent. Professor Dabney is having his hands full looking after building and equipment plans. He is securing a considerable number of machine tools from the government stock at 15 per cent of cost prices. In the Mechanics Department we have lost, temporarily, Professor Kommers, who has been granted leave of absence for three semesters to carry on important research work on "The Fatigue of Metals" at the University of Illinois, under the auspices of the National Research Council. The teaching staff has been increased by the appointment as assistant professor of Mr. T. MacLean Jasper, graduate of the University of Illinois, and for four years in the British army, and by the addition of two new instructors. In the Department of Mining and Metallurgy, Mr. E. R. Shorey, of the class of '08, has been appointed assistant professor. In Steam and Gas Engineering, we have lost the services for the current year of Professor Callan, who is on leave of absence to enable him to engage in some important engineering work in

the east. We hope that he will be able to return next year. Mr. H. D. Frary, formerly of the Forest Products Laboratory, has been appointed assistant professor in that department. In the Topographical Engineering Department, we welcome back Professor Ray Owen from his service in the Army. He has told us many interesting things of his experience as intelligence officer at General Pershing's headquarters.

In mentioning departments, a word should be added about our engineering library. Our students, I think, do not fully appreciate the unusually fine library and reading room facilities of which they have the advantage, and especially the valuable services of our librarian, Professor Volk. I am certain these library facilities are not excelled anywhere in the country and equalled in very few places.

The question of salaries for teachers in all branches of the profession is giving public officials a good deal of anxiety at the present time. Advances in teachers' salaries are so far behind increases in living expenses that the problem of securing satisfactory teachers is an exceedingly serious one. This is a matter in which the University shares with all other educational institutions, and is one in which all alumni should be intensely interested. While this problem has not yet by any means been fully solved by the University of Wisconsin, it has been frankly and courageously faced by the governing board, and, considering the circumstances of appropriations, a very satisfactory step forward has been made during the current year. Increases amounting to from 20 to 30 per cent have been made in the salaries of most of those who have been long in service at the University; and, while these increases have not approached the increase in expenses, the conditions at Wisconsin are probably as satisfactory as in any other state university. It is hoped that further improvement can be made in the near future. In this matter, the active support of alumni in securing the necessary increased appropriations will certainly be very helpful at the proper time.

The time has now come when a large expansion of laboratory facilities for the College of Engineering must be made, or else the number of students must be strictly limited. The present facilities cannot possibly serve the number of students who will be enrolled in our upper classes two years hence. We are glad to say that a start is being made in the right direction, and that

we believe the necessary facilities will be available in the near future. A fund of about \$65,000 is now available toward new shops and equipment for same. Under present price conditions, this money will not go very far, but plans have been completed according to which a portion of a proposed new shop building will be erected during the coming summer, and so arranged that all departments of the shop excepting the machine work can be moved to the new quarters.

Elsewhere in this number of the Engineer a description is given out of the proposed new shop and laboratory buildings. These are to consist ultimately of three buildings (including the present Forest Products Laboratory), located south of University Avenue and west of the C. M. & St. P. Ry., and of sufficient size to accommodate all of the engineering laboratories and, possibly, some of the drawing rooms. A large part of these buildings will consist of one-story, saw-tooth roof structures, but the portions next to the street will be two-story brick and concrete buildings of a style similar to that of the Forest Products Laboratory. This plan involves a new central engineering building, probably north of University Avenue, to house the library, auditorium, and many of the departments now located in the present main engineering building.

It will doubtless be many years before this entire program is carried out, but it is absolutely essential that at least one of these buildings be completed within two or three years, so as to provide adequately for all the shop work and the steam and gas laboratory. It is proposed to secure from the legislature, at the earliest possible moment, sufficient appropriations for this purpose and for adequate equipment. With the shops and the steam laboratory moved from present quarters, ample space for expansion for the present will be available for the electrical laboratory and the materials testing laboratory. This arrangement will still leave us short of space for drafting rooms in the present building, but some of this work can probably be accommodated temporarily in the new laboratory building.

These proposed laboratory buildings are absolutely necessary, not only for carrying on regular instruction work, but for giving reasonable opportunity for research work in the various departments. With our present crowded conditions, research work is almost out of the question, and it is important that this phase of the college work be promoted vigorously, not only for the

benefit of the students and teachers, but for the advantage accruing to the industries of the state.

In common with other engineering schools, we are almost flooded with representatives from industrial concerns on the lookout for good material from our senior class. Never has the demand for graduates, particularly in the industrial lines, been as great as at the present time. The beginning salaries offered are generally fairly in keeping with the increased cost of living, but in a few cases the offered salaries are too much out of line with others to attract the attention of students. The educational opportunities furnished by the various apprentice courses are, of course, valuable to the young graduate, and high salaries cannot be expected, but, no matter how attractive the future may seem in the particular industry, it is difficult to convince a student that it is good judgment to begin at \$90.00 a month when some other equally attractive concern is offering \$150.00 a month.

In addition to a strong demand for beginners, we receive calls, from time to time, for experienced men which we are generally quite unable to satisfy. It would be very helpful to us if the younger graduates, who have been out from three to five years, would keep us posted as to their desires in the way of possible changes of employment.

The biennial Engineering Alumni Directory will be issued next summer, and for this purpose we want correct data regarding occupation and address. Please, therefore, fill out and mail the enclosed slip. *Do this without fail.*

With greetings on behalf of the engineering faculty, I am,

Cordially yours,

F. E. TURNEAURE,

Dean.



MAPPING NORTHERN RUSSIA FOR THE ARCHANGEL EXPEDITION

By ROBERT C. JOHNSON, c '17

A few days before we sailed from England for Archangel the colonel checked up the British pioneer equipment which had been issued in place of our own, and discovered a shortage of topographical supplies. Upon requisitioning additional material from the War Office, in London, he was informed that Russia was too vast a country to be mapped during operations, so no further equipment would be necessary. In spite of this careless disposition of the matter, we purchased a few antiquated supplies, which had been passed over by the British Army, and hopefully ordered a great many more from France.



R. C. JOHNSON

When we arrived in Archangel, which is a city of 40,000 inhabitants with many fine buildings, we found the British trying to revise a survey made in 1880. Because they were not prepared to do this work, they assigned it to us. As the only map we had was to the scale of 1 to 1,000,000 and covered the areas from the North Pole to Petrograd, no one knew the exact location of the front or of the separate units. A search through the government offices in Archangel revealed a map of 800 sheets, printed in



Archangel is a city of 40,000 inhabitants and many fine buildings.

Russian, and of such a large scale as to be of little use for reproduction or distribution. There was only one copy of this map. Our problem then was to make an operations map showing the location of roads, villages, and rivers,—this to be done in the dead of winter and through a densely wooded area of 120,000 square miles.

We immediately organized a mapping section consisting of twenty Russian civilians and five Russian soldiers, (none of whom could read, write, or speak a word of English), three British officers, six British N. C. O's., and twenty U. S. engineers.—all under the command of a U. S. engineer officer. The section was divided into four parties,—two for office work and two for field work. Both field parties were sent out immediately to different fronts to become familiar with their territory and instruments. One office party was located as a branch office at British G. H. Q., and the other as a main office at our headquarters. As no mapping section was specifically authorized for our campaign, everyone in G. H. Q. felt, when one was created, that it belonged to his particular department. At least that was the feeling when there was any work to be unloaded on the section, even to the painting of door signs; but when the section needed men or equipment, it was only a poor orphan. Operations, Intelligence, and the C. R. E. were continually ordering work that was entirely irrelevant to the mapping question. To prevent these demands from interfering with regular work the general impression was given out that the branch office of G. H. Q. was the entire mapping section, and that when that office was busy no more work could be handled. In this manner no interruptions were allowed to stop the main work.

The general plan was to translate, pantograph, and trace the 800 sheets of the Russian map, and then send blue prints of them to the field parties for a plane-table check of all the roads. The map thus produced would be of sufficient accuracy for local operations and on a large enough scale (1-inch = 0.6 mile) to allow the plotting of artillery ranges. It was estimated that a map on that scale, large enough to include the entire area behind our lines, would be 36 feet square. This was too large for general operations work, so a scale one-tenth as large, or one inch = 6.6 miles, was selected for the latter purpose. Reproduction was to be done by lithography, equipment for which was ordered while we were in England but had not yet arrived.

While this general scheme was being worked out, the G. H. Q. office was assigned to produce temporary maps for the troops at the front.

One British captain, two sergeants, and four Russians who had some knowledge of the English alphabet, were assigned to the G. H. Q. office. All were trained topographers. Only a small quantity of equipment, consisting mainly of drawing pens, pantographs, and stencil duplicators was required. The duplicators were the only equipment available for reproduction, and this limited the size of the map sheets to 12" by 16". Twelve sheets were required to cover our area on the scale of 1-inch = 10 versts, the verst being the Russian unit of distance equal to 0.66 of a mile.

The first map issued to the troops was a rough sketch plotted from verbal information and small scale maps. It was drawn to the scale of 1 to 2,000,000 so that the entire area could be included on a sheet 8½" by 11". A Russian map surveyed in 1880 (scale 1" = 10 versts) was then translated and the topographical features were stenciled on waxed paper. A separate stencil was required for each color used. To facilitate the addition of new data, the topography was put on one sheet in black, the villages and roads were placed on a second sheet in red, and the co-ordinate squares were put on a third sheet in yellow. To get one complete copy of the map, impressions had to be taken from the three stencils. The first complete map on a usable scale was issued in eight sheets marked "Series I." As corrections and additional data were collected they were cut into the original stencils and new series were issued. Altogether, between September and March, six of these series were produced and distributed. The small size of the sheets, inferior quality of the paper, and the errors in the basic survey made these series very unsatisfactory; but they were the best that could be produced without supplies or information. The last series had to be printed with a combination of lard and dry color as even the supply of stencil ink was exhausted.

When the main office was organized there was no space available, so a building 40 ft. by 90 ft. was erected near our headquarters. Before the new office was ready for occupation the Russians were passed through a school to learn the English alphabet and the standard forms for transliteration. At the same time Russian maps were collected and filed. These maps

varied in scale from 1-in. = 0.25 verst to 1-in. = 10 versts. After careful study two scales were adopted as standards for the expedition. They were 1-in. = 1 verst and 1-in. = 10 versts. The former scale is slightly larger than that used for U. S. Geological Survey maps, which is 1 to 62,000. It was decided to draw the large map first and then reduce it.

Work started in earnest on December first with thirty men in the office, twenty-two of whom were Russians. The latter were very slow and careless although their work was neat. A careful check had to be made of all their lettering as none of them understood English. They struck periodically for higher wages or shorter hours; but were usually bluffed into returning when fired. They did not realize that we couldn't get along without them.

The gravest question was one of sufficient supplies with which to carry on the work. Our stock was estimated to last only six weeks, and there was a general shortage of pens, pencils, erasers, thumb tacks, and other things which are so plentiful in our own country. Our only methods of reproduction were by blue printing and hectographing. The latter method is always unsatisfactory and can be used efficiently only up to twenty-five copies. Our supply of blueprint paper was not sufficient to make one complete copy of the one verst map. Nevertheless, work was pushed ahead, and cablegrams were sent to rush supplies.

Each sheet of the Russian map represented a district equivalent to our townships. They were very irregular in shape with no sides straight or parallel. In the absence of a key chart, the districts had first to be fitted together before their correct locations could be learned. To start all of the men working at once they were assigned widely separated districts, which they reduced to the standard scale. As soon as several townships were completed a tracing was made on paper 14" by 18". The sheets were limited to this size because the local lithographic stones were only 16" by 20". In case our own equipment did not arrive, we had to figure on using the local supplies.

Work progressed smoothly and rapidly until the different areas were joined. Then roads would go to the edge of one section and stop, rivers were offset as much as fifteen miles, and borders original surveys were made by compass, during a period of

did not match at all. This was due to two causes: First, the forty years; and, second, working in from the edges of the map made all errors accumulative toward the center. A chart was made of the magnetic variations during the forty years and corrections were applied to the respective surveys. The residual error was then distributed uniformly over the entire area so that only a small variation occurred at any one point.

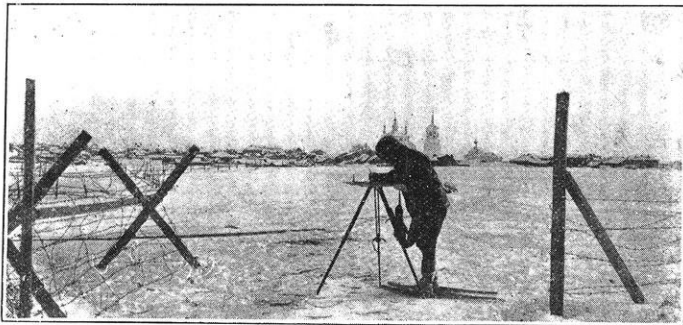
Paper tracings of the territory along the front were blue-printed. Our print paper was slow and as the sun shines there only four hours a day during the winter this blueprinting was an arduous job. Daylight prints required a full hour of exposure. Finally an old arc machine was discovered at the shipyards; but, as the current was on only eight hours a day, the printing ran way behind the drawing. However, by the first of January, the field parties were furnished with enough material to keep them busy.

Each field party was commanded by a Royal Engineer officer, and consisted of Russian forestry men and British or American N. C. O's. The Russians acted as guides and helpers, while the N. C. O's. ran the surveys. One party was located on the Archangel-Vologda R. R. at the advanced base and the other at the advanced base on the Dvina River.



A party equipped with snowshoes, skis, a horse and sleigh, sleeping bags, and two weeks rations was sent out on every road.

For checking the blue prints, one N. C. O. and two Russians, equipped with snowshoes, skis, a horse and sleigh, sleeping bags, and two weeks' rations, were sent out on every road. All of the roads have guide posts every verst, which give the distances between villages. Beside these there are section line clearings north and south every four versts. With these methods of calculating distances and by the use of plane-tables, compasses, and closed traverses a good check was obtained. A great deal of information was obtained from local peasants as to trails, swamps, and clearings. Whenever the blueprints were especially inaccurate a complete plane-table traverse was made. On returning to their base the N. C. O.'s consolidated their surveys and forwarded them to the main office. Not a single day was lost because of cold weather, although the Russians hated to stay out when the temperature stuck around 30° below zero. One field party of three American N. C. O.'s and six Russians made 1,200 miles of road traverses in the six weeks, from January first to February twelfth. No attempt was made to run out a base line or make solar observations, so that the work was unquestionably in error, but was sufficiently accurate for our purpose.

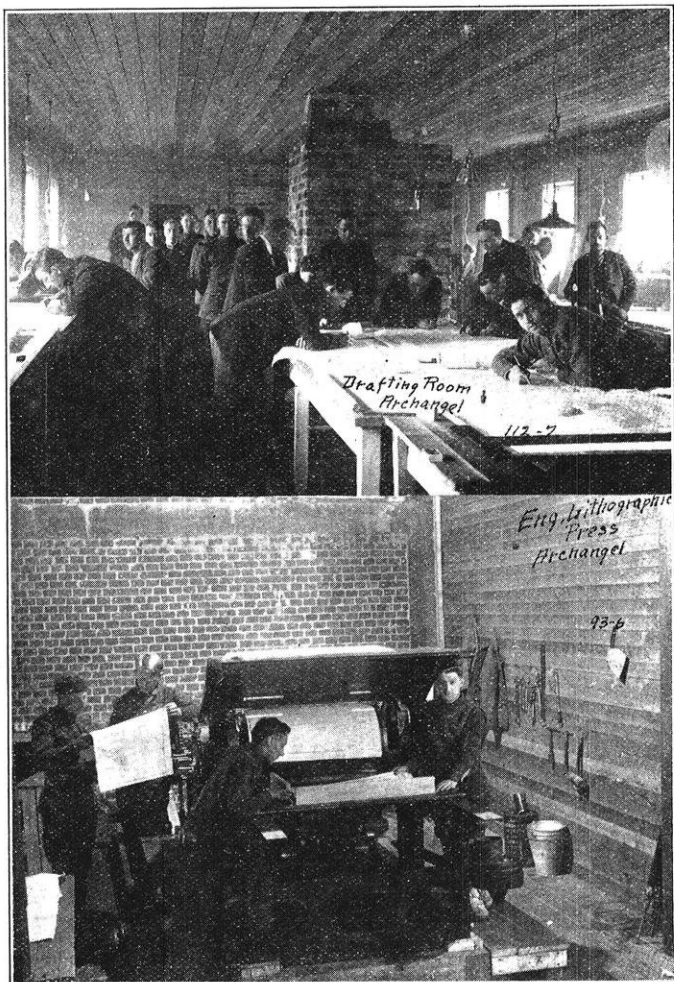


Wherever the blueprints were especially inaccurate, a complete plane-table traverse was made. Not a single day was lost because of cold weather, although the Russians hated to stay out when the temperature stuck around 30° below zero.

All through December and January the supply officer met every boat arriving in Archangel so as to be sure no one else obtained our supplies, should they arrive. Every department acted as a free lance whenever ships came in, because they all

needed everything. One of the last ships to arrive was met by the usual battalion of supply officers only to find that the thoughtful War Office had sent up telephone poles. Archangel is a lumber city with forty saw mills!

Finally a shipment of lithographic supplies was received and unpacked; but the gasoline engine was minus everything but the



ABOVE: The Russians were slow and careless although their work was neat.

BELOW: The lithographers and pressmen swore they had never seen such a machine as their oldest acquaintances dated back only to 1880.

flywheel and muffler, the press had no bolts with which to assemble it, and the circular glass of the arc light machine was broken. These would have been trivial matters anywhere except in Archangel where the nearest replacements are two thousand miles away. After much work the press was set up and an electric motor attached. All of the lithographers and pressmen swore they had never seen such a machine as their oldest acquaintances dated back only to 1880. Modern presses are adjusted to print about 1,200 sheets an hour so the motor had been geared for this speed. The first time the switch was closed the 2-ton plate carrier developed so much energy that it forgot to come back at the end of its run and kept going until a wall interfered. This caused a two weeks' delay while the blacksmiths made repairs and adjusting pulleys were erected for the motor.

The zinc plates that arrived with the press defined the maximum sized sheet that could be used as 28" by 18". This was just double the size of the original layout. By this time all of the Russian maps had been pantographed, making a map thirty-six feet square. Seventeen sheets of tracing cloth thirty-six feet long were marked out in rectangles 28" by 18" and each rectangle was numbered consecutively. As soon as the corrected blue prints were received from the field the originals were corrected and laid out on drawing tables in long strips. The rolls of tracing cloth were stretched over them and the real work commenced. By this time the Russian draftsmen had been graded and classified and the best men trained for fine work. Starting at the end of a long strip one man would work through, drawing straight lines only, following him another would put in roads only, a third rivers, a fourth vertical letters, a fifth slant lettering, and so on through all the grades of work. While one strip was being drawn, a second was laid out so the operation was continuous. As soon as rolls were finished and ready for reproduction one man spent his entire time checking up corrections and omissions.

When the mapping section was first organized two lithographers were placed in a Russian lithographic shop to become familiar with the local machinery. This was done so they would be ready to go ahead in case our own equipment failed to come. On the arrival of the press from England an inventory showed that no chemicals were included so lists were made up

and the materials purchased locally. This was a difficult task for the Russians were very jealous of their supplies and concealed them in barns, attics, and warehouses. Finally enough were gathered so that the plates could be made.

There are three possible methods of preparing plates. The first is to draw directly on the zinc or stone, the second to draw on sensitized transfer paper and take off this impression, and the third is to photograph onto the plates as is done in blue-printing. In all cases the impression has to be negative on the plate.

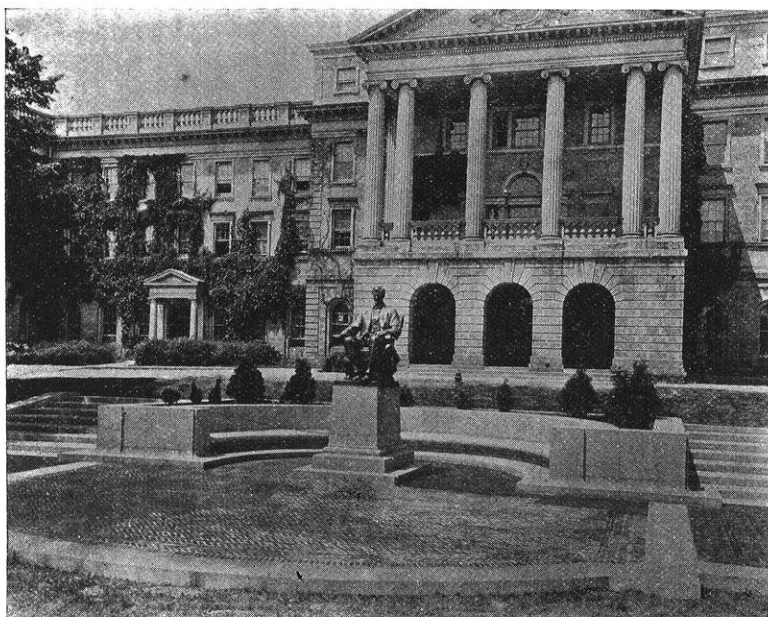
A separate plate has to be used for each color. As at least one hundred different sheets had to be printed, at first the photographic method seemed the most desirable, but after many unsuccessful tests were made this method had to be given up. Drawing on transfer paper requires special training and care; so we finally decided to draw directly on the zinc plates.

By the end of February we started drawing on the zinc plates. This was done by placing a series of plates on a long table, turning one of the tracing cloth rolls upside down on top of them, and transferring the lines through carbon paper. The impression was then printed in with lithographer's ink, the draftsmen working in series as before. To save drawing titles, symbols and borders on each plate, a standard was made up and 100,000 impressions "pulled" in black. Then the rivers, lakes and villages were put in in black, the roads and trails in red, and the co-ordinate lines in yellow. Thus each sheet had to pass through the press four times. Because of this an error was introduced due to the stretching and shrinking of the poor paper. On the verst map this was well within the accuracy of the survey. It required two hours to make 1,000 impressions from a zinc plate, so our capacity after the titles had been run was only 1,000 complete copies a day. As we expected to leave Archangel in July, our capacity was limited to about 100 sheets with a thousand copies of each. The one verst map of the entire area required 500 sheets so we limited ourselves to the lines of communication and the front. These were completed about June fifteenth.

While the one verst map was being lithographed, a 1-inch to 10 verst key map was drawn. This map was made for an index

to the one verst map. The ratio of 1 to 10 made it possible for us to use exactly the same co-ordinates for both maps, which greatly simplified their use and prevented confusion in designating places.

In June, when the First Battalion, 310th Engineers, left Archangel, the British Expedition had been furnished by us with a complete series of Army maps. As the London War Office was not yet convinced that Russia could be mapped no English Sections or equipment were sent to replace us. Therefore, on our way home we left our originals at the War Office in London for reproduction on heavy paper and transmittal back to Archangel.



LINCOLN TERRACE

ST. PATRICK'S PARADE

C. A. WIEPKING,
Senior Civil.

Ideal weather conditions and plenty of pep from all our loyal knights made the annual Parade on the afternoon of Saturday, March 20, a grand success. The procession was almost a mile



ST. PATRICK

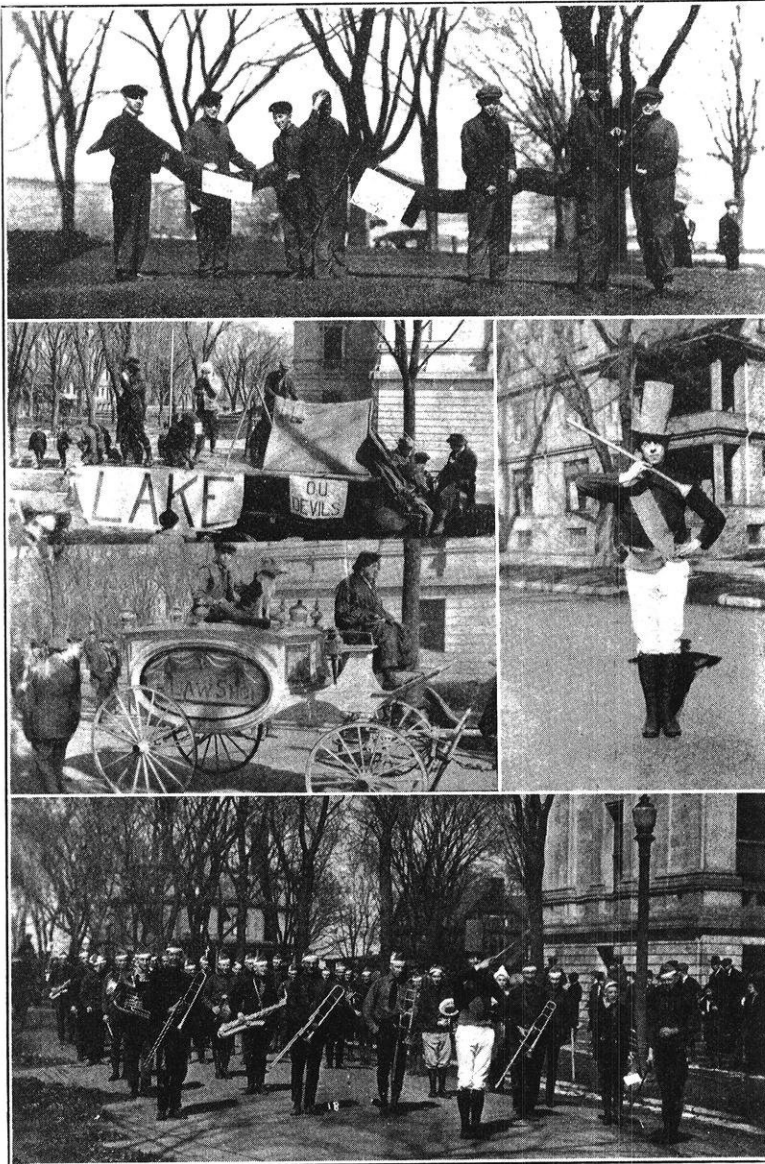
long, partly because the various items were well-spaced, but mostly because of the wealth of exhibits. Senior and Freshman alike plunged into the work of preparation, and as a result it was a fine array that entertained the spectators that afternoon. The parade took many people by surprise, because no one raised a "particular howl about us going to have a pee-rade", and the comments of the spectators who lined the sidewalks were all in the way of appreciation. Probably they have a better insight, now, into the mysteries of the science of engineering; at any rate, we who were in it can remember, for some time to come, the performance of a stunt that was real fun and that added to the pep of the college.

The success of the parade is due to the well-planned efforts of a joint committee representing the engineering societies. Claire C. Congdon, a junior civil, acted as chairman; the other members were E. A. Kerler, W. J. Ladwig, I. I. Rotter, W. G. Hansen, A. E. Liebert, C. M. Kurtz, and L. H. Hahn. Herbert H. Wheaton, a junior in civil engineering, was selected to play the part of our patron Saint. He was assisted by Harold Youngberg, a freshman, who acted as coachman. The drum major was Walter O. Zervas, a sophomore civil, who used the favorite wand "presto" of the plumbing trade in leading the 40-piece band that headed the column. The band, composed entirely of engineers, accomplished more than a hit with its lively

playing of college songs. Claire Congdon was responsible for the turn-out of musicians and for the success of their playing.

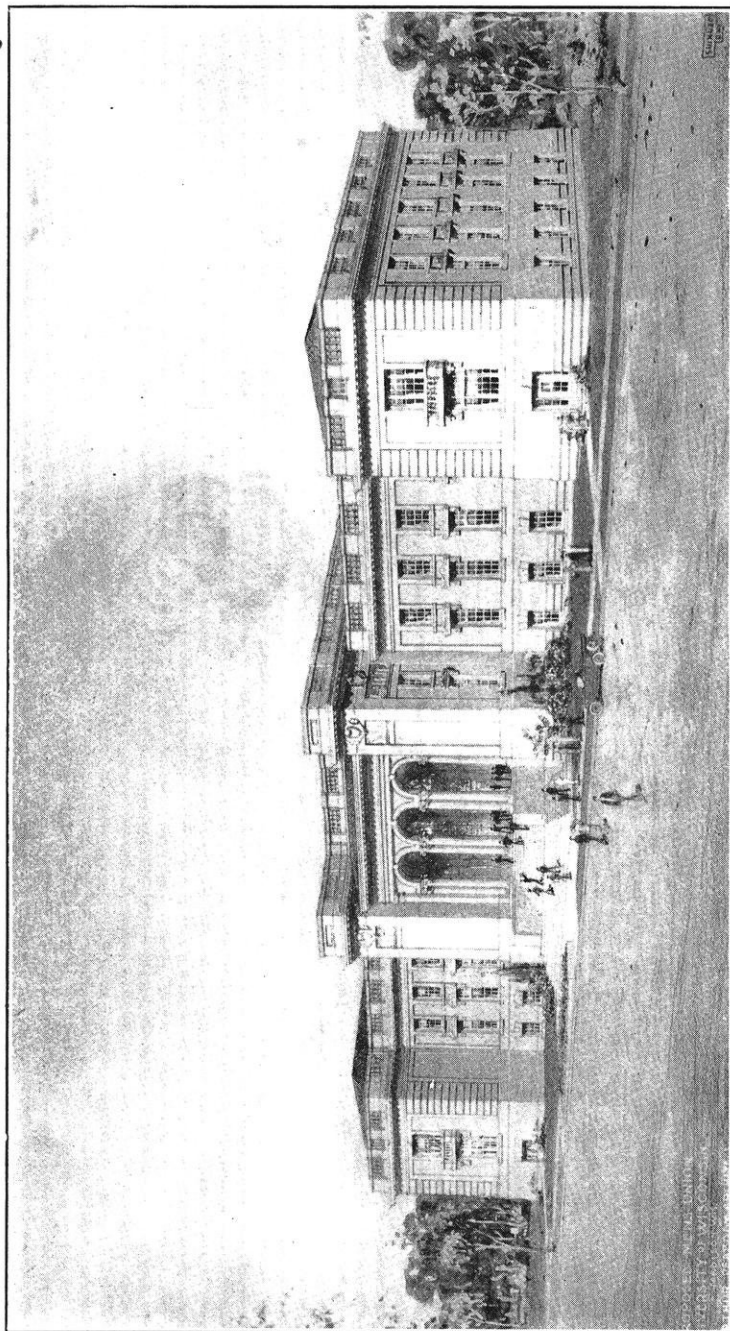
Following the band in the parade came the snake, and then St. Patrick himself, in an ancient and stately vehicle, drawn by young and less stately freshmen. The Blarney Stone came next, and then several floats prepared by the mechanical engineers. Prominent among these were the "spreader," representing the Commerce School, and the hearse, in which the remains of the Law School were carried to the final resting place. The electricals added several choice pieces to the line, the illuminating engineers' outfit and the "Jazz Wagon" float starring. Several frosh pursued these floats pushing wheelbarrows and ardently maintaining the most approved styles of locomotion. The "Devils Lake" float and the surveyors and stadia rods decorated the next strip of film, and then the "wrench" that screwed the Law School "nut" off the "bench" followed in proper order. The miners came with a complete outfit consisting of a mule-drawn ore-cart and the necessary picks, shovels, and miner's lamps. The Engineers Club was represented by a float named the "Tea Hounds"; R. E. Hantzsch supplied the necessary Patent Leather Haircomb and was assisted by a brother engineer in muslins. The chemicals contributed a still that operated at a very efficient rate, and the original foot-rail, the Schlitz bottle, and other anti-prohibition specimens lent an air of defiance to the conglomeration.

The parade formed on Park Street, at the foot of the campus, and marched down State Street and around the Square, terminating at the lower campus. The Blarney Stone was placed at the head of the library steps, and after the congregation had assembled, St. Patrick was introduced. In his speech Pat told of his own work as an engineer, of his sojourn in the vaults of the Engineering Building, and of the purpose of the traditional kissing of the Blarney Stone. Miss Mary C. Johnson, the one engineering co-ed, led a sky-rocket for Pat (receiving several for herself) and then the Saint started the ceremony of kissing the stone. Our "sister engineer" followed the example of Saint Pat and immediately there was a great rush, all the knights trying to get the next turn. After all had saluted that way (and some had been moved by fervent ecstacy to repeat the kissing) the stone was returned to its secret resting place to await its calling forth next year.



SIDE SHOTS AT THE PARADE

*Showing the Snake, the Devil's Lake Float, the Law Shop
Hearse, the Drum Major, and the Band*



THE PROPOSED WISCONSIN MEMORIAL UNION

THE MEMORIAL UNION BUILDING

WILLARD A. KATES,

Junior Electrical

The cut on the opposite page shows what Wisconsin is soon to have, a memorial Union Building second to none. It will fill a need felt at Wisconsin for several years and also be an appropriate memorial to those who gave their lives in the service of their country. Although the campaign for funds for the building has not yet been completed, the students have already subscribed over \$75,000 and the campaign among the alumni has been conducted with equal success. When this copy of the *ENGINEER* reaches you the campaign will probably be over and the success of the project assured.

It has been proposed to locate the building on Langdon street, west of the men's gymnasium, but a definite decision has not yet been reached.

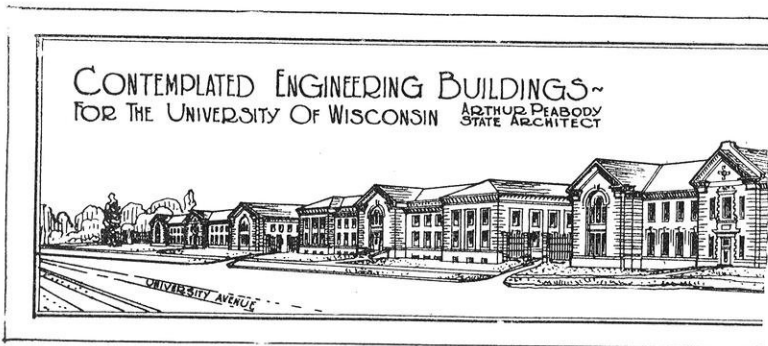
The memorial will be constructed of Bedford limestone, the exterior design and treatment harmonizing with the State Historical Library which is adjacent to the proposed location. The central portion of the structure is the memorial unit, the pylons on either side of the triple central arches giving space for appropriate inscriptions. The central entrance admits to the memorial rotunda, two floors in height, which serves as an entrance to the wings and a foyer of the theater. Around the open gallery on the second floor are places for flags, tablets, and other memorials.

The trophy room occupies the space under the main rotunda. The first floor of the right wing of the building is divided into the student commons, a large dining room and a cafeteria. On the second floor, there will be the faculty meeting room, a debating society hall, and headquarters for the Alumni Association.

The first floor of the left wing will contain a social and lounging room. On the second floor are offices for the various Wisconsin publications and the self-government organizations.

The theater is located in the rear of the memorial rotunda, and will have a capacity of 1,200, furnishing a needed auditorium in which to have student plays and lectures.

The basement will be given over to a billiard hall and bowling alleys.



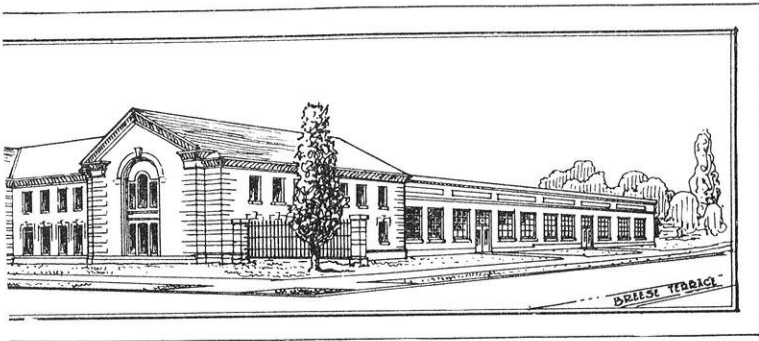
THE NEW ENGINEERING LABORATORIES

The close of the great war has brought to the University a steadily increasing number of students, and has made it imperative to enlarge the laboratory spaces of the College of Engineering. To do this in the present location is impracticable, principally on account of the nature of the ground, which was never well suited for the purpose and which is now fully occupied.

The Regents, therefore, plan to relocate the college along University Avenue, west of the crossing of the Chicago, Milwaukee & St. Paul Railway. This plan involves the construction of a series of one-story laboratory buildings, to accommodate the several branches of Engineering. These will be connected directly to buildings, two stories in height, fronting immediately upon the avenue and similar in style to the Forest Products Laboratory. The funds now available will be sufficient only for the beginning of this movement, which must become presently a considerable matter. The laboratories now contemplated will give room for a portion of the Shop Department only, including such items as the mill room, pattern shop, forge and foundry, chipping and filing, and heat treatment rooms.

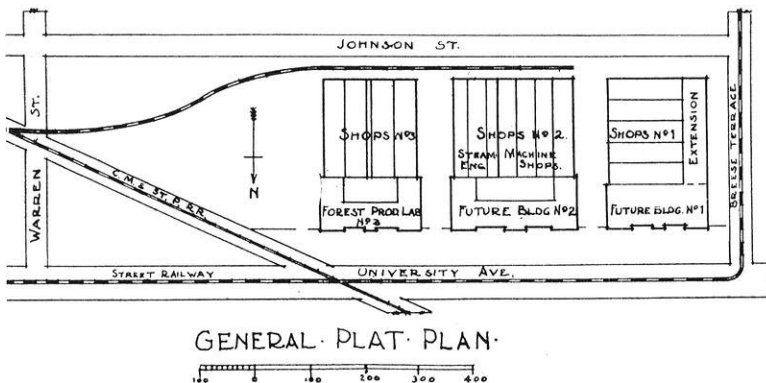
At the earliest time possible additional bays must be erected to accommodate the other shop branches and the steam and gas laboratory which is now badly located in the rear of the Engineering Building and so greatly overcrowded as to make efficient work difficult.

The electrical laboratory should be constructed immediately afterward, in this way bringing these allied branches together again, in a considerably enlarged form and one of much greater



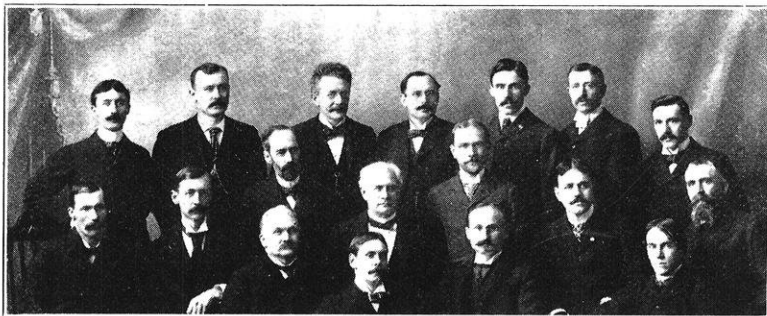
advantage as regards convenience and utility. The remaining laboratories and class room buildings will follow as rapidly as circumstances permit until the entire College of Engineering is relocated. With its facilities thus expanded to meet the increased demand, the College may expect to maintain its old time reputation as one of the foremost among the state universities.

The illustrations show the buildings to be erected on the south side of University Avenue. The Forest Products Laboratory is outgrown and must either be enlarged, or be replaced by a new laboratory built upon a new location. In the latter event, the present building would fall to the College of Engineering for which it is eminently suitable. To the south of this building a series of one-story laboratories will be required, similar to those now under consideration. These will provide laboratory space for other departments. The main engineering building, or buildings, intended for class room work, should be located on the north side of the avenue.



ANTHOLOGY OF OUR COLLEGE

Away back in November of 1898, the faculty of this College gathered at the photographer's "gallery" and had a picture taken. We have dug a copy of the picture from Johnny Giva's D—Mack's archives and reproduce it here for your edification.



THE FACULTY, NOVEMBER 23, 1898

BURGESS, LOTTES, BULL, JONES, ALEXANDER, SMITH, MORS,
HARGRAVE, TURNEAURE, WHITNEY, DAVIES, JACKSON, MACK,
KING, SWENSON, MAURER, BEEBE, MUTCHLER.

A handsome collection they are; much like the faculty of today except for the open front collars which gave great opportunity for the Adam's apple to register emotion. The faculty men of today conceal their emotion behind turn down collars. Three of the group have weathered the trials of 21 years of teaching and are still with us,—the Dean, Eddie Maurer, and Lenny Smith. Five are dead,—Professors Bull, Davies, King, Whitney, and Mr. Mors. The others have scattered. Charlie Burgess is head of the Burgess Laboratories and has built up a big business in pocket batteries; Lottes is with the International Harvester Co. Walter Alexander is vice-president and general manager of the Union Refrigerator and Transit Co., of Milwaukee; Hargrave is with the Regina Company, at Rahway, N. J.; Swenson is representative of Barron G. Collier, Inc., at New York; Jackson has made a national reputation as a consulting engineer; Beebe is chief engineer of the Wadsworth Watch Case Co., at Dayton, Ky.; and Mr. Mutchler, after many years as instructor in the shops and as university carpenter, has left the service of the University.

Would you like to know how the Dean and Eddie and Lenny look today? Very well. The Dean's picture adorns his letter over on the front page of this magazine. Seventeen years spent in guiding the destinies of this College have removed some of the hair and otherwise changed the landscape; but he is still recognizable.



PROFESSOR MAURER

Professor Maurer, still looking like Beau H. Brummel, is at the head of the Mechanics Department. He too has lost some hair, —torn out in respair at the denseness of students who pass through his mill. But, in the midst of his anguish, he has found surcease from care in the preparation of several books, among which his Technical Mechanics stands out as one of best sellers on the campus.



PROFESSOR SMITH

Professor Smith wears his years becomingly and probably would deny that he had any years to speak of; but the little twin girls he used to be so proud of when you were chasing the azimuth around the campus, have grown up and been graduated and have gone out into the world. Being fond of girls, and his own having left the home nest, he has gone up on the Hill with a course in City Planning that brings the coeds about him thickern flies. He still devotes part of his time to teaching the engineers how to build highways, but he has turned the surveying over to Ray Owen, and Ray is so darned hard to slip things over on. Some years ago Prof. Smith revised Dean Johnson's book on Surveying and it now stands as a monument to both men.

EDITORIALS

THIS ISSUE

Look us over and then toss up your brickbats and boquets. We beg but one boon; do not wrap the brickbat in the boquet.

We are glad of this opportunity to put the WISCONSIN ENGINEER in the hands of the engineering alumni. Occasionally we hear from some old timer who doesn't know we are in existence and it hurts our vanity. We want you *all* to know us.

We are under obligations to the Dean for entrusting his annual letter to our tender mercies, and to the Regents for helping us to meet the expense of the issue.

The staff members have promised to devote their spring vacation to checking the card record of our graduates against such data as may be available in the way of new addresses, and to addressing envelopes. The mailing job is worse than making up the magazine.

However, if you like the ENGINEER, we will feel well repaid. There is satisfaction in strengthening the bond between Wisconsin men and their college.

We know you will read the Dean's letter with interest, and we believe that Bob Johnson's story of Mapping in Russia is worth your time.

The Alumni Notes may contain the name of some one you know but have lost track of, and the Campus Notes will give you some conception of what student life is like today.

The other items we lay before you with a feeling that the space limitations have been too great a handicap. We cannot give you any adequate idea of the Wisconsin of 1920 in the few pages at our disposal.

Lay your plans to come back at Commencement time. Come back and look us over.

THAT HOOVER BOOM

Since we gave Herbert Hoover a modest editorial boost toward the presidency, last November, the idea has spread far beyond what anyone had any idea it would. It has spread so widely that the professional politicians are beginning to take notice. Hoover clubs are springing up—Madison has one, by the way, to which all engineering students who are voters should belong. Efforts are being made to co-ordinate the unorganized enthusiasm for this man who has inspired the imagination of the country as no other candidate has done, and within the past few days Hoover has indicated that at least he would not turn the candidacy down cold if it were offered under proper circumstances. We may have a real heart interest in this campaign after all.

STUDENT FACULTY COMMITTEE

In past years, the inherent pep and get-together spirit of the engineers has been the guarantee of success in every project the college has undertaken. Our functions have been almost wholly spontaneous, and under control of whoever took the initiative. But, with greatly increased enrollment, and the advent of numerous organizations within the college, activities have become too much divided for efficiency. St. Patrick's Parade was successful; but the Engineers' Minstrel, which has formerly been the most important purely collegiate affair on the calendar, fell through entirely. Consequently, our reputation for get-up-and-go spirit has suffered. Obviously a remedy is needed, and such a remedy has been provided in the form of the Student-Faculty Committee.

The Committee, composed of two faculty members, a senior and a junior from each of the five courses, three sophomores and two freshmen, will act as a go-between for students and faculty, and as general headquarters for all affairs relating to the college as a whole. When a function such as an engineer's minstrel, mixer, or parade is to be given, the Committee will keep track of the calendar and get things under way on the jump. However, it will in no way interfere with individual initiative and effort. On the contrary, it will simply provide direction of all effort to the end that the old-time pep of the engineers, which

we know is stronger than ever, may accomplish the utmost. Vacancies on the committee are to be filled by election this spring. Turn out. S. B. G.

HELLUP!!

The regular alumni section appears each month, and through it we endeavor to keep the readers informed of happenings to friends and class mates. The editor cannot, however, hope to know all the news of interest and happenings among the alumni, even with the aid of the staff, and, of course, only the news which reaches the magazine can be published. The one way the department can be made bigger and better is to make it a department by the alumni as well as for them. You may think that what you know is old stuff, whereas others would welcome it as breezy news. Almost every time we meet one of the old fellows back for a visit and we ask about classmates, there is at first a dearth of news. But during the conversation it develops: "Oh! say, did you hear about So-and-so? He was down....." Gradually the material for a goodly portion of the next month's section is collected.

Don't bother about the form of the items; send the names and what you know. Help make the Alumni Department *your* department. W. A. K.

A LOUNGE FOR THE ENGINEERING BUILDING

One of our number lifts up his voice in lamentation because the laws, across the campus, have a comfortable room in their building, to which they can retire when the weather is too severe for them to loaf on the front steps. Rumor has it that the place is provided with cozy chairs, couches, and gaboons, and our fellow engineer states in a loud voice that he wants such a lounging place for the engineers. At first the idea has a great appeal; but second thought makes us doubtful. We outnumber the laws about ten to one, and the lounge would have to be a large one to accommodate all of us. Besides that, when does an engineer have time to use such a place? And, finally, if tobacco cans, cigarette sacks, butts, and burned matches were scattered about the lounge as freely as they are about our front steps, no one could get into the room after the first week. However, don't get peevish; perhaps something can be done.

ALUMNI NOTES

By WILLARD A. KATES

Quite a number of Wisconsin alumni are engaged by the General Electric Company at Schenectady, N. Y. The following list of the men and their positions was sent by GLENN B. WARREN, m '19, who is in the Turbine Engineering Department.

M. OLSON, e '99, in charge of Alternating Current Engineering Department.

E. G. MERRICK, e '00, Power and Mining Department.

J. E. BROBST, e '03, assistant manager, Industrial Control Department.

L. R. BROWN, e '03, Pittsfield works of General Electric Co., in charge of Transformer Sales Department.

F. H. BLOOD, e '04, Cost Department.

M. A. WHITING, e '04, Power and Mining Department.

D. K. FROST, e '04, Power and Mining Sales Department.

C. A. HANSEN, ch '05, headquarters in Schenectady, but is away from there doing metallurgical work a greater part of the time.

R. C. MUIR, e '05, engineering work in International General Electric Co.

R. T. WAGNER, e '05, in charge of Lightning Arrester Sales.

H. C. WARD, ex-e '05, sales manager, Rochester office.

J. MURRAY WEED, ad sp '05, electric welding specialist.

E. C. GRISWOLD, e '09, Induction Motor Engineering.

J. D. WRIGHT, e '09, Power and Mining Engineering Department.

E. S. HENNINGSEN, e '12, Alternating Current Engineering Department.

C. B. BRADISH, e '12, Industrial Control Engineering Department.

L. A. NORRIS, e '12, Industrial Control Engineering Department.

E. H. HORSTKOTTE, e '12, Power and Mining Engineering Department.

W. C. RAUBE, e 15,

P. O. ROBERG, e '16.

C. C. DODGE, e '17, Marine Engineering Department.

E. M. WISE, e '19, Railway Equipment Engineering, Ship Control Department.

G. S. AFFLECK, ch '18, is on the Engineering staff of the French Battery Company, Madison.

EDWARD ANDERSON, m '18, and KENNETH SHIELDS, m '18, are teaching drawing here this semester.

GEORGE H. J. ANDRAE, e '16, who has been Industrial Heating Engineer with the Westinghouse Company for the past two years, has charge of that work for the New England territory. He may be addressed at 10 High Street, Boston, Mass.

GEORGE E. BOOTH, e '16, is a sales engineer at the Chicago office of the Cutler Hammer Co.

ARTHUR O. F. BUCHHOLTZ, m '17, writes enthusiastically about the La Fayette car, by whose builders he has been employed on layout work. "Since leaving the University," he says, "I have had varied experiences. Of these, having become a married man is the greatest." His address is 2011 N. Delaware St., Indianapolis.

"LARRY" BURZYNSKI, m '18, has resigned his position as Chief Engineer of the Wisconsin Foundry and Machine Co. to enter the experimental department of the Federal Rubber Co., Cudahy.

FRED L. CONNIT, m '16, and RALPH GRANT, m '17, are employed by the Allis-Chalmers Co., Milwaukee.

ROBERT J. COUGHLIN, e '16, is with the B. F. Sturtevant Co., Clinton and Harrison Streets, Chicago. He is a sales engineer in the department handling fans and blowers for oil furnaces.

WILLIAM R. FEILER, e '16, is an insurance adjuster with an office in the Insurance Exchange building, Chicago.

EDWIN A. GALLUN, m '19, is with Gallun Sons Leather Company of Milwaukee, Wis.

J. H. GEISSE, m '17, has remained in the air service, and now signs himself "Executive, Power Plant Section, 'Engineering' Division, McCook Field."

J. M. GILLET, ch '15, recently received his honorable discharge from the army where he served as second lieutenant in the Ordnance Department. Mr. Gillet was discharged owing to physical disability received through the accidental explosion of material which he was inspecting. He is now in the Development Department of the Good-year Tire and Rubber Company at Akron, Ohio.

HARRY GREEN, ex-e '15, is working in the Switchboard Department of the Allis-Chalmers Company.

WALTER F. GRUBB, c '17, died of tuberculosis at the Pines Sanitarium at Stevens Point, Wisconsin, February 19, 1920.

V. C. HAMEISTER, ch '16, is in charge of important development work for the National Carbon Company, at Cleveland, Ohio. He recently visited the University in connection with professional duties.

J. E. HARPER, ex-e '17, is superintendent of the heat treatment department at the Allis-Chalmers plant, Milwaukee.

BERT H. HAWKINS, m '13, is reported to be in the mechanical department of the C., B. & Q. Ry. His address is room 1500, C., B. & Q. Bldg., Chicago.

H. R. HEINTZEN, e '18, is with the research department of T. M. E. R. & L. Co., Milwaukee.

PRESLEY D. HOLMES, ch '20, finished his course in February and is now employed by the Fisk Tire Company at Minneapolis, Minnesota.

GEORGE S. JACKSON, e '18, is taking the student course with the Allis-Chalmers Company.

MR. GUY M. JOHNSON, m '06, is manager of the Northern Indiana Gas & Electric Co., South Bend, Indiana.

LOUIS G. KREUZ, ch '17, is employed in the Engineering Department of the Detroit City Gas Company, Detroit, Michigan.

The address of CARL H. KRUEGER, e '16 is, Y. M. C. A., Milwaukee. He is with the Wisconsin Telephone Co.

W. R. LACEY, ch '15, is in the Sales Department of the National Gage and Equipment Company, La Crosse, Wisconsin.

ROLAND E. MAURER, m '14, took a position with the Jones Underfeed Stoker Co. of Detroit on the first of April. He has left the employ of the American Sheet and Tin-plate Co. at Pittsburg with whom he has been for the past few years.

ROGER MERRIAM, ex-m '21, is now a draftsman with the Waukesha Motor Co.

ALOIS J. MIKNA, m '18, is the efficiency engineer for the Wisconsin Motor Company located at Milwaukee, Wis.

The business address of LUCIUS B. NASH, e '17, is in care of American Radiator Co., 816 South Michigan Ave., Chicago.

W. H. NEGLEY, ch '18, is a sales engineer for the Haskelite Manufacturing Corporation of Chicago, in the Indianapolis district.

H. P. PALMATIER, e '12, is Chief Electrical Engineer for the Wisconsin Motor Co. Palmatier was a motorcycle driver with the A. E. F. for more than a year.

C. A. POTTINGER, e '18, is City Illuminating Engineer for the City of Milwaukee.

A. E. SACKERSON, ex-c '14, is in the forging department of the American Bridge Co., with headquarters in room 1310, 210 So. La Salle St., Chicago.

EDWIN SCHMIDT, ex-m '18, is with the Cutler Hammer Mfg., Co., in the Thomas Meter Department. At present he is in Alabama on experimental work. Schmidt is engaged to Miss Lillian Meyer of Milwaukee, and expects to be married in June.

EARL P. SCHNABEL, m '18, is with the Highway Commission, with headquarters at La Crosse.

E. S. SCHRANCK, m '18, is engineer of tests at the Watervliet Arsenal. He lives at Troy, N. Y.

L. F. SEYBOLD, e '18, is living in Milwaukee at the Y. M. C. A. He is in the research department of T. M. E. R. & L. Co. there.

The address of J. R. SHEA, e '09, is now 738 North Ridgeland Ave., Oak Park, Illinois.

EARL R. STIVERS, CE '15, has left the service of the Interstate Commerce Commission to accept a position as chief of survey party with the Alabama State Highway Commission. His district will cover thirteen counties in the northern part of the state, and his headquarters will be at Decatur, Alabama.

G. P. STOCKER, c '09, is Professor of Civil Engineering at the University of Arkansas, Fayetteville, Ark.

R. M. STORER, ch '18, is in the Mechanical Engineering Department of the Standard Oil Company at Sugar Creek, Missouri.

LLOYD M. STRAND, e '16, is doing engineering work for the Cline Electric and Mfg. Co., Chicago.

CHARLES W. STUART, ex-m '17, is with the Dodge Brothers, of Detroit.

G. H. SUHS, m '10, is Steam Power Plant Engineer for the Ne-koosa Edwards Paper Company, Port Edwards, Wisconsin.

The marriage of JOHN W. TANGHE, c '16, to Althea Schade of Cudahy took place recently. Tanghe served as lieutenant in the chemical warfare service attached to headquarters division in France. At present he is a civil engineer for Brill and Tanghe, Milwaukee engineers and contractors. Mr. and Mrs. Tanghe will make their home near Washington Park, Milwaukee.

D. W. TYRRELL, ch. '17, resigned from the Army in February after serving in the heavy artillery overseas and subsequently in the Coast Artillery at Fort Worden, Washington. He is now on the Engineering staff of the French Battery Company, Madison, Wisconsin.

W. K. WALTHERS, e '16, visited the campus recently. He has built a home in Wilmette. A son, Bruce Julius, was born September 9, 1919.

RAYMOND M. WIRKA, m '18, is with the Forest Products Laboratory, Madison.

W. S. WILDER, e '18, was married last September to Miss Ruth E. Smith of Madison. Wilder is now working with T. M. E. R. & L. Co. in Milwaukee.

JOHN H. WOLFE, ch '12, is Superintendent of Gas Manufacturing Station, Consolidated Gas Company, Baltimore. He has recently been discharged from the Navy where he held a commission as Ensign.

F. M. WOLVERTON, min '20, is now employed as Engineering inspector by the Arthur Mining Co. at Hibbing, Minn. C. J. CALVIN, c '06, is the engineer in charge of this work.

DE WITT E. YATES, m '18, is with the Chippewa Falls Foundry and Machinery Co., at Chippewa Falls, Wisconsin.

RALPH YOUNG, c '09, is with Allis-Chalmers Company in the sales department of the Steam Engine Department.

G. E. YOUNGBERG, c '14, is with the Highway Commission of South Dakota. His address is 948 West 8th Street, Sioux Falls.

JAMES G. ZIMMERMAN, e '04, E. E. '15, who has been with the Amtu Engineering Institute of Chicago, has been appointed instructor in Ignition at the Milwaukee School of Engineering. His home address is 1145 Kinnickinnic Ave., Milwaukee.

R. F. SCHUCHARDT, e '97, E. E. '11, Chief Electrical Engineer of the Commonwealth Edison Company, of Chicago, addressed the faculty and engineering students of Purdue University on March 23. His address was in the form of an inspirational talk to young engineers and the place of the central station in the industrial advance.

ROBERT A. BAXTER, ex-ch '18, was married on March 25, at Philadelphia, to Alma J. Pott, ex-commerce '20. They are at home at 45 Jackson Street, Long Branch, N. J. Bob is employed by the Consolidated Gas Company of N. J.

THOMAS B. CASEY, c '17, gives his present address as 1237—2nd Ave. East, Cedar Rapids, Iowa. He is on construction work for the Leonard Construction Co., of Chicago.

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THE ENGINEERING SOCIETIES

There are, at the present time, seven technical societies among the students of the College of Engineering. They vary in membership from about 50 to 65. Meetings, as a rule, are held bi-weekly. The oldest society is the U. W. Engineers Club which takes in members from all of the various courses. The youngest is the chapter of the American Association of Engineers which was installed this year. The others are, the Civil Engineering Society, the Chemical Engineering Society, the student section of the American Institute of Electrical Engineers, the student branch of the American Society of Mechanical Engineers, and the Mining Club.

THE ENGINEERS' SONG BOOK

After much discussion in student circles of the College of Engineering, final steps are being taken to publish a book containing many of the old favorite engineers' songs. The members of the student branch of the American Institute of Electrical Engineers have undertaken to put the words and melodies of these songs into permanent form, so that they may be available to the incoming freshmen, and so that seniors may have them as a remembrance of the days they are leaving behind. The book will have an attractive cover and will be of pocket size; it will be on sale at the Engineering Building on May 10, for twenty-five cents.

CAMPUS NOTES

By WILSON D. TRUEBLOOD

SPRIG has cub—
MID-SEMESTERS have gone—
PROM is practically assured—
WHAT more could you ask?

Thank goodness for this lovely spring weather. In the absence of galoshes, it's a real pleasure to get the old instruments out and "survey the hill."

The Law School gives an awful gasp
For on the steps appear—the Engineers—
The Bar Rats quoth, "Our nerves they rasp".
While the Co-eds say, "The dears".

And a woman kissed our Blarney stone!

In the race for the Nelson Trophy, the Engineers staged a decided comeback by capturing first place at the inter-college track meet. Among the winners we find C. W. Wille, H. A. Sternlieb, T. D. Jones, I. L. Wade, H. C. Bachuber, H. Gude, J. O. Pauly, and H. J. Steel. With victories in boxing and handball in our favor, the Nelson trophy may remain where it stands for another year.

HIGH GEAR.

(Scene, Lathrop Hall, March 27, about 10 P. X. Orchestra jazzing it, with an occasional explosion of harmony.)

Fair One: What was that horrible noise?

Engineer: Oh, nothing,—some poor fellow just stripped his gears.

PROF. D. W. MEAD has been retained as consulting engineer by the Grand River Drainage District, of Livingston County, Mo., in connection with flood prevention in the Grand River valley.

Nine states, Iowa, Illinois, Minnesota, Ohio, Michigan, North Dakota, South Dakota, Kansas, and Wisconsin entered fifteen teams in the mid-west high school basketball tournament held at the varsity gym March 25 to 27. After a hard race, Cedar Rapids, Iowa, finally won the title by defeating Winfield, Kansas, 21 to 20; Superior, Wisconsin, placed third. Ranking teams were presented with cups, and tiny gold or silver basket balls for each member. Individual stars also received medals. The large attendance and interest shown this year will probably establish the tournament as a yearly event.

PROF. D. W. MEAD, in his course in Contracts and Engineering Relations, required the seniors to submit a problem in ethics that had occurred in their own experiences, and this is what he got from one puzzled senior: "A young engineer, just out of school has been very successful at the start of his first job and is well represented by his associates. He became engaged to the beautiful daughter of his employer. Just before the proposed date of the wedding he finds that she has a wooden leg. Should he break it off?"

Patrons of the histrionic were pleased to behold "Red" Hawkins, ch '20, pounding the keys in the orchestra pit at Union Vodvil, April 2 and 3. "Chuck" Morris, m '22, assisted the performance by startling the audience with a few feats of magic.

There is an instructor named Cy',
His methods you surely must try',
"If you'll assume bodies free,
"A shark you will be,
"And Mechanics a sweet apple pie."

With the coming of Spring and politics the Engineers have once more gone for some of the bacon. Cap Rasmussen, '22, was elected Business Manager of the 1922 Badger, and Mike Knapp, ch '20, was elected basketball representative on the Athletic Board. A hot fight is promised for the sophomore positions on the Athletic Board. Among the eight candidates for the two places open, are Al Knollin, civil, Seymour Nason, mechanical, and Clarence Wille, chemical.

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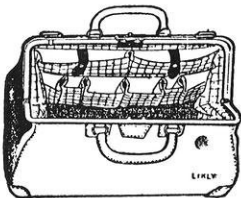
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PROF. ROARK, formerly of our mechanics department, visited friends in the college last week. He is an assistant professor at the University of Iowa.

MECHANICAL ADVANTAGES OF DANCING.

(From the Sun Prairie Sunset.)

It is reported that one engineer driving his Ford home from the Plumber's Ball the other night stripped his gears on the edge of town. There was no delay, however, since he had a program in his pocket.

Due to the efforts of Prof. L. S. Smith in bringing Mr. George E. Martin of the Barrett Company to Madison, those interested in paving construction were afforded the opportunity of hearing a series of four lectures on tars and their use in the paving industry. Mr. Martin spoke Monday, March 22, at 8:00 A. M., on "The Chemical Manufacture and Testing of Refined Tars," and at 4:30 P. M. on "The Maintenance of Broken Stone and Gravel Roads with Bituminous Materials." All four lectures were given in the Engineering Building. A number of lantern slides were exhibited showing modern road machinery and illustrating the latest practices in road building.

EVEN AS YOU AND I.

The first dance had been a complete failure—his feet had stuttered the whole time. So in distress his fair companion spoke: "Why, Bud, I can't understand; you were such a marvelous dancer before the war."

"Yes, but since the cooties left me I haven't had much inclination."

The Mining Club, with characteristic initiative, opened the presidential campaign on the campus at the first meeting in March by organizing a Hoover-for-President club. The club thinks that the lawyers have run the country long enough, and low enough, and that it is now up to an engineer and business man, to put the government back on a sound business basis. Steps are being taken to affiliate with the National Hoover club, and further campaigning on the campus will be carried on under the direction and with the co-operation of the national body.

APPEARANCES ARE DECEIVING, LADIES

On Saturday afternoon after Saint Pat's Parade, Professor Berggren escorted some thirty of his Junior Mechanicals on an inspection trip through the University Heating Station and the Capitol Heating Plant. At the U. W. plant everybody got becomingly messed up with soot and ashes, which made their appearance approximate that of genuine stokers. The whole party climbed aboard a street car to ride across town to the other plant. On the way down, a number of women got on the car, and of course seats were immediately vacated for them. When Berggren got up, the lady who took his place was overheard to remark to her companion, "I just hate to have a *working man* get up to give me his seat. Why, this may be their only chance to sit down all day long!"

The first thing that an old grad in the Geology Department hits for upon visiting Madison is the *Outcrop*, a scrapbook compiled from year to year by the Geological Club; for in it he can tell at a glance what has happened since his graduation, where his old pals are, and at the same time can stimulate fond memories of his undergraduate days. In addition the book contains interesting Geological information that has been procured during the year, resumes of summer field trips, and bits of humor. The Engineering School might well follow suit.

Interest was aroused among the seniors by the visit of Grant Shepard who spent two days here last week for the purpose of hiring graduate engineers for the Guggenheim interests in Chile. Mr. Shepard was looking for electricals, civils, and miners,—the last in particular. He offered a three-year contract with \$175 per month for men without any experience and \$200 per month for men with some experience, with good opportunities for advancement.

There is a professor named Ray,
Who is as fierce as a tiger at bay,
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He will kick; he will bite,
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EXPERT OPINION.

(As is Hoyle on Bridge and Kinne on Bridges, so also is Brittingham on Dancing.)

Some people are never satisfied; now they are objecting to cheek to cheek dancing, but how do they want you to dance? Examine carefully the possibilities of dancing. There can not be nose to nose dancing, because some people have long noses and others have short noses. There can not be ear to ear dancing, because it would give the dancer a crick in his neck. There can not be lip to lip dancing, because—oh, well, that's unsanitary. There can not be chin to chin dancing, because some people have double chins and others have no chins at all. So what's wrong with cheek to cheek dancing anyway? Some people never will be satisfied!

T. B.

In anticipation of equipping the new shops with the latest machinery, the University is acquiring no small number of machine tools under the Caldwell Bill, an act approved by Congress Nov. 19, 1920, providing for the sale to trade, technical and public schools, and Universities of machine tools used in the munitions plants of the U. S. during the War, for fifteen per cent of their cost to Uncle Sam.

SOMEONE IS ALWAYS TAKING THE J. O. L.

'Twas a sad scene. For upon the cold grey stone of the E. B. steps sat a little frosh, sobbing pitifully. The crowd held aloof in silence—until his heart touched, a noble senior stepped forth and spoke!

"Why do you cry my fair lad?"

"Boo hoo-o-o-oo. Somebody just told me that there wasn't any St. Patrick!"

(Curtain.)

On Thursday evening, March 18, Mr. W. M. White, Chief Engineer of the Hydraulic Department of the Allis-Chalmers Manufacturing Company, spoke to a large audience in the auditorium of the Engineering Building on "Power Development at Niagara Falls." A number of excellent slides and motion pictures were shown of scenery in the vicinity of Niagara Falls, and of hydraulic machinery recently installed there by the Allis-Chalmers Company.

Mr. Jasper of the mechanics department is practically assured that Mr. Imber and Mr. Brown of Isslington, England, will visit the Forest Products Laboratory here in the near future. They are coming to this country to estimate the prospects of a lumber supply for a tremendous British commercial airplane building concern. Mr. Imber is an ex-pilot of the British air service, and has had all the experiences of aerial warfare including a smashup. He is the inventor of the gasoline tank covering which gave Allied planes perfect immunity from danger through tanks exploding or even being punctured. This covering has the peculiar property of allowing the bullet to pass through and then automatically sealing the rupture. Mr. Imber will be obtained, if possible, for an Engineering lecture.

We're not to blame for this one; Henry Ford pulled it.

Henry, entering the class room for an eight o'clock after a battle with an early March blizzard, "It was such miserable weather I decided to stay in today; then I looked at the calendar—"

End man: "Well?"

H—: "It said March Fourth, so I did."

An engineer will again direct the business end of the 1922 Badger, following a custom established and followed for many years. Until a few years ago, it was a sort of practice to elect an engineer as business manager. After a long session of L. & S., and Commerce managers, "Cap" Rasmussen, a sophomore in electrical engineering, has re-established the custom by securing the election.

Mr. Hitchcock, the latest addition to the engineering faculty, besides being instructor in the machine shops, is also in charge of some of the reorganization of the work that is to take place before the new shops are in running order. He is considered especially valuable because of his exceptional success in training the "Gobs" in machine practice at the New London, Connecticut, Naval Experimental Station where he had charge of the shops. It was partially through the co-operation of Mr. Hitchcock that the U. of W. professors, who were working on various experiments at New London, secured such splendid results.

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Special courses in Engineering for the summer session of 1920 are being arranged for by the College of Engineering. The courses will include instruction for practical engineers, teachers in technical schools, regular and advanced students, men returning from service, and students with deficient entrance qualifications. Manual arts students will be given an opportunity to take subjects along engineering lines.

A Wisconsin section of the American Institute of Mining and Metallurgical Engineers has been formed and about thirty of the students in the mining course have been admitted to membership as Junior Associates.

STACY L. BROWN, junior chemical, has had to leave school as a result of being gassed while in service in France. He is now in the River Pines Sanitarium at Stevens Point.

Twenty of the metallurgists with Professor McCaffrey spent March 25th to 27th on an inspection trip. At Indiana Harbor they visited the works of the Inland Steel Co. and the Mark Manufacturing Co. works of the Steel and Tube Co. of America. At Gary they saw the works of the Indiana Steel Co. and in South Chicago the Iroquois Steel Co., the Illinois Steel Works and the Wisconsin Steel Co. were inspected.

Thanks to the Wisconsin Engineers' Club float, the Tea Hounds have been completely exterminated. As the parade passed the Candy shop hundreds of the weaklings were seen to shrivel up and die. R. E. Hantzsch will receive the D. S. C. for his noble devotion to the cause.

It has been reported that one of Einstein's twelve disciples has signed up as a contortionist at the New York Hippodrome. If he can turn an orange inside out what couldn't he do on a trapeze?

Mr. H. S. Osborne, transmission engineer for the American Telephone and Telegraph Company spoke on "Telephone Transmission of the Human Voice" in the Engineering Auditorium on March 19th. Graphic oscillograms were used to illustrate the lecture.

Among new winter sports introduced this year is the gentle art of curling. The first game in Madison for many years was played on the university rink the day of the ice carnival, January 24. A curling club has been inaugurated now, with great success. The members expect to have enclosed rinks with warmed balconies where the fair ones may see the brawny men bravely tussle with the "stones" below.

Some of our brothers at the ball could have done much better in low gear than in high.

We copied this from the Journal of the American Medical Association; please refer it to Van: "A preposition, according to the purists, should not be used at the end of a sentence. Now, I cannot see what such a rule was made for. It is a poor one to go by. Hard and fast laws, unless they are those of actual grammar, cannot always be adhered to. Often, indeed, they are better departed from."

On Friday, March 19th, the Engineer's Club listened to an interesting talk by B. L. Conley on "The Relation of Pure to Applied Science." C. W. Wille talked on "The Dye Industry." A short business meeting followed the talks.

It has been reported by the janitor that several of the frosh have been searching the basement for the Saint's tomb. Look out, greenlings, you're liable to run into someone's private stock.

Our nomination for a place on the N. E. C. list: The instructor who threatens to lock the classroom door at eight sharp and arrives the next morning four and a half minutes late. Also the mechanics instructor who pronounces area as if he meant breezier.

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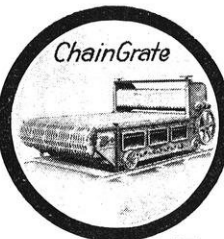
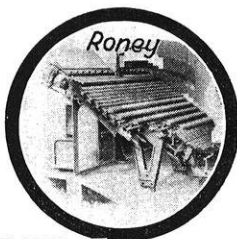
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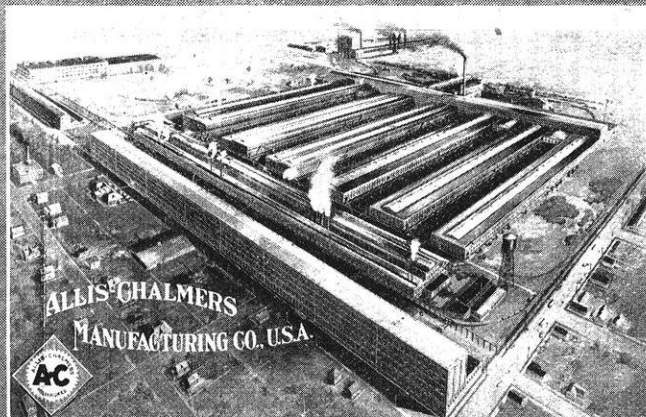
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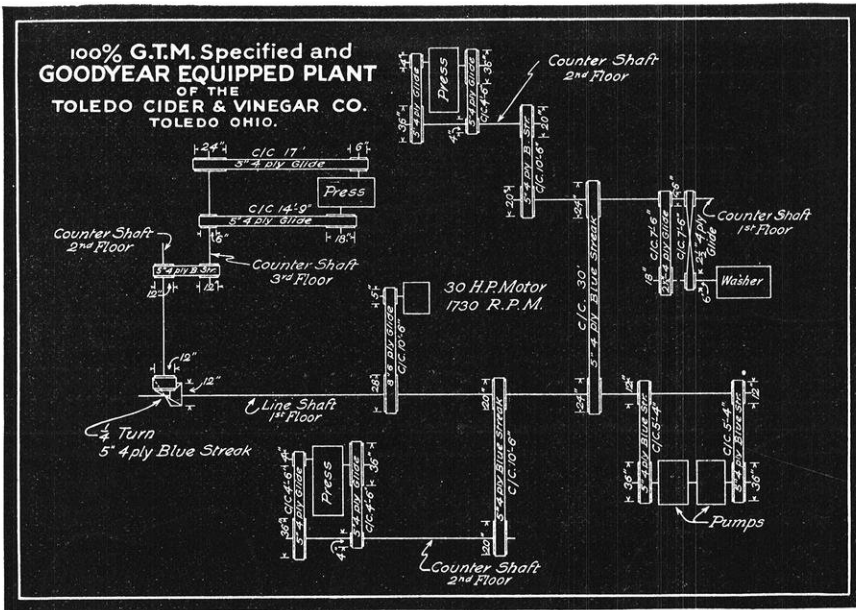
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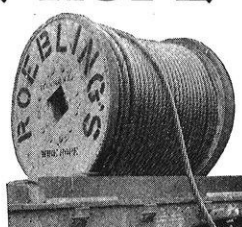
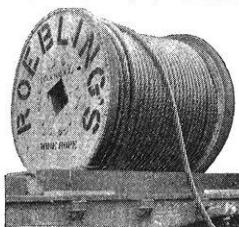
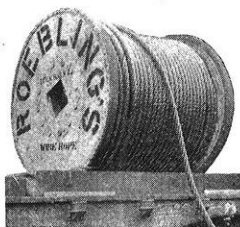
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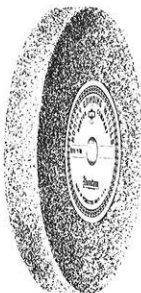
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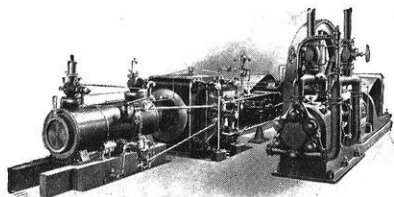
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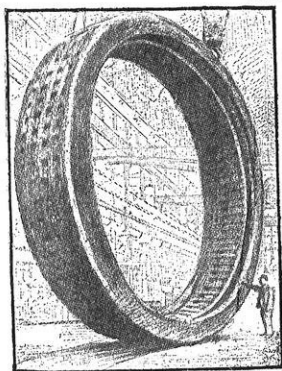
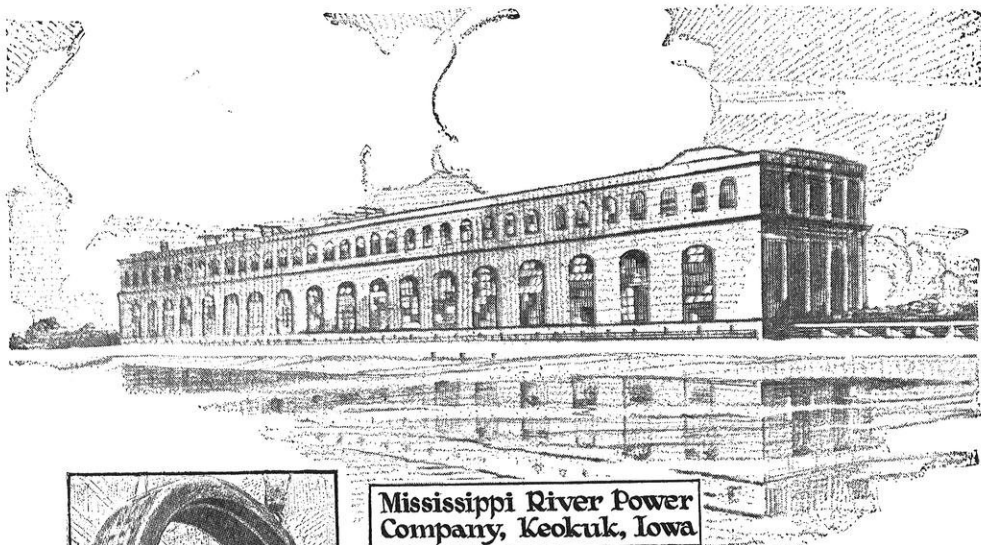
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