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THREE CENT

HOW ICE IS MADE.

Professor Richards Explains the Process of Producing Artificial Cold—An Economic Method.

Owing to a change in the convocation program for this week, Professor Richards, who was to speak tomorrow, was called upon yesterday. His talk on the "Manufacture of ice," furnished a most interesting explanation of how ice is made.

Few of the recent manufacturing processes, said the professor, are as important, both in industry and society, as that of making cold from heat. Ice or its equivalent is necessary in the transportation of perishable goods and in preserving meats and fruits. Because of their advantages, mechanical processes of producing ice have superseded the old way of obtaining it.

The cost of manufacturing ice is no greater than that of sawing it out of lakes and streams and storing it away. In many places, he said, ice can be made at a cost of fifty cents per ton and at seventy-five cents it can be produced in any locality.

Professor Richards said that there are five distinct machines or sets of machines employed in the manufacture of ice; namely, battery boiler, steam engine, refrigerator, expansion coil and condenser. The process is as follows: Ammonia is drawn into the compressor and is greatly condensed, thence it is put through the condenser and converted into a liquid. From the condenser the liquid is run through valves and allowed to volatilize, by reducing the high pressure. This evaporation consumes heat which is drawn from a vat of brine through which the expansion coils are run. The brine serves simply as a conductor of heat. Since it will not solidify, it can be reduced to a very low temperature, imbibing heat from the cans of distilled water that are placed in the vat of brine. These cans are replenished by condensing the steam from the boilers. Consequently, ice made from this water is practically pure. The process requires about twenty-four hours. If less time is taken, the blocks of ice will be porous in the center, which is due to the fact that the freezing goes on from the outside towards the center.

The professor explained that, although ice is cheap, it costs about fifty per cent more than an equivalent amount of cold. That is to say, much energy is lost in the freezing. This is taken advantage of in large cold storage buildings by circulating the brine itself through the different rooms and allowing the gas to expand, thus completing the work by a simpler process.

The speaker said that any substance that would volatilize could be used for making ice, such as carbon dioxide and even heat and compressed air.

The first attempt at distributing cold from central plants, he said, was made in 1890 by a Denver man. The brine was circulated under the streets and the expansion of the gas allowed to take place beneath the customer's place of business, the ammonia being drawn back to the plant and condensed. Several processes of making ice, employed in various countries, were mentioned. But these had their disadvantages, especially the one that is said to have been used in Egypt, centuries ago, in which ice was produced by rapidly fanning a basin of water.

Y. M. C. A. ECHOES OF THE STATE CONVENTION.

Those students who had the privilege of attending the Y. M. C. A. gathering at York last week, are able to testify to the value of this convention, both as to the influence of the persons attending and as a means of uniting the forces in the state, and giving definite plans and purposes. Three international secretaries were present, C. K. Ober who had charge of the city association's work, gave some valuable addresses on the organization of the work, and especially in cities of less than 5000 population. It is quite possible, he said, to conduct a successful work in places of that size. G. S. Phelps, had special charge of the student department. There is no part of association work that has as large a field as the student department, necessarily, distinct from the city field, and easily organized, because involving little expense. Geo. D. McDill was present for the railroad department. An interesting feature illustrating this was in the presentation of a "Railroad Train" where several spoke on different lines of the railroad department. Probably the most prominent man in the convention was B. B. Tyler of Denver. Mr. Tyler is past sixty years old but is young as any college student. His reading from the Bible, and discussions on bible topics are a source of inspiration to all. He spoke at the men's meeting Sunday afternoon, which is considered the great meeting of the convention.

The address by Chancellor Andrews on Saturday night was full of practical wisdom and gave the young men a glimpse into the future, as to their possibilities and he gave the association a large place in helping to solve the political, social and religious problems of the time. The people of York showed themselves most entertaining and hospitable and the 200 delegates united in praise of York and her people.

The results show themselves in the determination on the part of the delegates to improve every opportunity in their association work, making bible study and personal effort the foundation for this work.

GIRLS' TOURNAMENT.

Tickets Are Going With a Rush—The Wahoo Team Strong This Year—Makes a Better Record Than Missouri.

Tickets are going with a rush for the basket ball tournament, especially those which are reserved. If not another one should be sold, the armory would be well filled for the matches, although tickets have been on sale as yet only a few days.

The Wahoo high school team, so popular with the spectators of last year, will reappear almost intact, except for the loss of Miss Jansa, now one of the stars of the varsity and of the freshman team. The captain is Miss Willa Adams, who made the record of the tournament for free throws. Her colleague at center is Kate St. Martin. The guards are Teresa St. Martin and Alice Grafe; the forwards Edith Dixon and Fern Ort.

The players from Wahoo are small but enthusiastic, and will face their opponents, high school girls from Omaha, Friday night, determined to do their best. So far the Wahoo team has the honor of having scored more points against the hitherto invincible varsity team than any other team yet played. It rolled up ten, mostly made by Miss Jansa and Miss Adams, in last year's tournament thus making a better record than that made by the Missouri team last fall.

A COLLEGE OF MINES.

The subject of a school of mines in the University of Nebraska is beginning to demand some attention among the instructors. In a recent interview with Professor Barbour the question was spoken of at some length. Agriculture, he said, was considered by many, in fact by the majority, as the true basis of wealth, in America. But they forget to consider the mining wealth, in which it must be admitted there is even greater stability than in agriculture.

Wherever there are mines or quarries men are almost constantly in employment since the demand for competent workmen is constantly increasing. On the other hand in agriculture men are not infrequently thrown out of work for long periods at a time. Mines, especially those yielding the precious metals, are scarcely if ever subject to these conditions and as a natural consequence during the recent years of drouth and stringency there was for example a very considerable exodus from the farming and grazing lands of Nebraska to the quarries and mines of the surrounding states. This has therefore become a practical and serious question. The greater stability of the mining industry over agriculture is turning attention more towards that.

The resources of the United States in this line are so boundless that there can be no estimate of their importance until decades have made

further development possible. The output of our mines and quarries at the annually.

Up to the present time a great deal of national and state legislation has been enacted for the benefit of agriculture. This has been carried on to such an extent that agricultural colleges have been established all over the union for the diffusion of knowledge of this kind. The same thing ought to be done in regard to the establishment of schools of mining.

We are holding the unique position among the nations of the world of not only supplying our own wants but also those of other countries. This requires the development of our resources which in time calls for competent men. This demand for such men will make it incumbent on the faculties in colleges bordering on mining regions to provide suitable education for young men interested in following any of the many mining pursuits. These requirements have been met in part by growing young schools of mines in South Dakota, Colorado and Wyoming, but as yet the field is such an open one that the demand has not been supplied.

The poor student is put at a great disadvantage if he must go back to the school of mines at Columbia college, New York city in order to get his education. It being so far removed from the great center of the mining industry it would be proper to establish schools nearer the real regions where operations are carried on.

Mining was heretofore been conducted on a very wasteful basis. The tendency now is to abandon this for the improved methods brought about by the training of men in colleges established for that purpose. With these conditions existing there is every opportunity for the establishment of successful schools of mines in this section of the country.

Correspondence is now going on between the athletic board and Colorado College in regard to the scheduling of a game with that institution for next October. The indications are generally in favor of the two colleges coming together. The game would be played at Boulder, Colorado, the location of the school.

THE WEATHER.

For Lincoln and vicinity for today partly cloudy with moderate temperature.

Weather report for 24 hours, ending 7 pm.

Highest temperature 51 degrees, occurring at 3:15 pm.

Lowest temperature, 32 degrees, occurring at 3 am.

Mean temperature, 42 degree, which is 14 degrees above the normal.

GEO. A. LOVELAND,
Section Director.

A basketball game is expected in the near future between the Unions and Delians.