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A Tradition

A few weeks ago the "Belle of New York" played to a full and receptive house. Ticket sales were well over a thousand. This production brought to our campus again an old type of production, the college farce, a type of show that can only be given by college *men*. The "Quadrangle Jesters," as they hope to be known in the future, have made an admirable beginning toward what we hope and what promises to be a tradition of the College of Engineering.

No one will question that this type of entertainment is infinitely more worth while than the old "Round-ups" of past years. The "Belle of New York" was well staged, well costumed, and the dancing was excellent. Bob Edwards, the coach, was largely responsible for this. The leads displayed real talent and stage technique. Len Winkler, in the character part of the German Lunatic, literally stole the show. The orchestra, composed entirely of engineering students and under the direction of "Pete" Clymer, is also worthy of praise. The one weakness of the production was the vocal choruses and the apparent lack of training of some of the solo parts. But one should not expect the first attempt to give perfect results. Our main criticism is that the show was only given a one-night run.

Next year a better play, perhaps one with local color, will be selected. A year's experience will iron out the weaknesses that were apparent this year. The project has proved its worth. The "Quadrangle Jesters," although not yet officially recognized by the University, seem to have a bright future. The same fine cooperation and enthusiasm that are traditional in engineering activities assure this future.

—The Editor.

Lest We Forget

IT is interesting to note that religious educators claim that since this era of depression has come upon us church attendance has been on the increase throughout the nation. It seems that in times of prosperity people are prone to forget the spiritual side of their lives but when some great catastrophe comes upon them they flock into the churches and places of worship. That is history. During the Great War people thronged the churches throughout the world. Has anyone suggested that the political and economic unrest and instability that we are now experiencing *might* be due to forces beyond the control of mere man? This all brings to mind that warning note sounded by Kipling in his "Recessional," which was written during a time of great pomp and splendor in the British Empire. Part of it might well have been written several years ago.

If, drunk with sight of power, we loose
Wild Tongues that have not Thee in awe,
Such boastings as the Gentiles use,
Or lesser breeds without the law—
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget!

For heathen heart that puts her trust
In reeking tube and iron shard,
All valiant dust that builds on dust,
And guarding, calls not Thee to guard,
For frantic boast and foolish word—
Thy mercy on Thy people, Lord!

—From Kipling's "Recessional."

—F. H. T.

Developments in a Chemical Age

Undoubtedly this is a chemical age. The word chemistry has escaped from the walls of academic institutions and has become a common word to every one in every community. We have come to realize as a nation that chemistry is not limited to a laboratory on some college campus but it is in the forests, fields, and the manufacturing plants. Chemistry is a very popular subject and its popularization has helped in the recent developments of chemistry.

Chemistry is concerned with the compositions of substances and their chemical energy. There are ninety-two elements of which we must compose compounds. All these elements may be put together in many different ways to make the thousands of materials that we have in this world that are termed as chemical compounds. Some of the duties of the chemist are: to tear down a compound into its elements and be able to tell definitely what there is in the compound or of what elements it is composed, another is to determine the laws and principles Nature used in building up various substances for our use, and his third task, which is more important, is to construct these substances himself after discovering what they are composed of and the laws and principles involved in their making. His product if reached is called an artificial product. There is a feeling among people that the artificial product is inferior to the natural product but this is not so. The products formed from synthetic substances are equal to or in cases they are superior to those products which Nature prepared.

W. R. E.

Engineering in Dentistry

THE extent to which engineering enters into other professions is really remarkable. Take for example, dentistry. The other day in conversation with my dentist we came to the discussion of the *modus operandi* of false teeth, and after discussing the matter for some time I was rather undecided as to whether the dental profession was a branch, of mechanical engineering, mining and metallurgical engineering, or civil engineering. The dentist explained to me, and is evident when one thinks about it, that the dental profession borrows from the mining and metallurgical engineers in two respects, first, the use of alloys, which must be absolutely non-corrosive, attractive in appearance and high in mechanical strength. Some of the gold alloys used in tooth restoration contain high grade steel. The dentist must have a knowledge of the various alloys available and their heat treatment. They must be machine cast and molded.

Then again the science of ceramics is highly important. Store teeth are made from porcelain, and it is no small trick to manufacture a bit of porcelain of the extremely high strength necessary for teeth with the peculiar appearance of ivory, in the various shades and conformations met with in the different individual mouths. A set of teeth

constitutes a highly efficient crusher, and the surfaces of the teeth must be designed not only to do the work of crushing and triturating the food thoroughly, mixing the saliva, but must look well and be comfortable to the wearer.

The mechanical motions involved in the lower jaw are quite complicated and when one considers that the lower denture or plate is subjected to relatively enormous pressures of the jaw muscles and that whether the plate is easily worn and retained or not depends on purely mechanical relationship between the jaw bone and the plate, is it any wonder that the dentist has to be a fairly good mechanical engineer? He must be a good mechanical engineer not only from the standpoint of the mechanical motions involved in the jaw, but in the method of attachment and the manufacture of the plate itself.

One of the functions of the civil engineer is taken to be that of building bridges. We hear of bridge work in an individual's mouth and probably do not realize that in every sense of the word they are bridges, except that as a general proposition the dentist will utilize piles which are already in place rather than driving piles in the patient's mouth. The artificial teeth however, are held on a bridge or beam, the ends of which are securely fastened to other teeth, which constitute the abutments of the bridge. This beam is subjected to very considerable loads by the action of chewing and must be able to sustain these loads without appreciable deflection; otherwise it might loosen up on the abutments and cause further decay.

In looking over some of the dentist's tools I find that he makes extensive use of jigs and fixtures. Many of his machines are rather complicated as to adjustments and motions involved, and I am told that many of the best machines have been designed by practicing engineers. I asked him why he didn't have a level and transit in his office, he said he was thinking seriously of obtaining these machines. I suggested that possibly he could map the location of the various table with a plane table, but he thought that this would possibly take up a little too much of the office room. He was unfamiliar with the advantages of compressed air concrete breakers in drilling and extraction, and had never experimented with the use of mechanical tie tampers in inserting full dentures in order to get a full bearing on the gums. However, he has taken these matters under consideration and he expects that shortly we will hear of many improvements in the methods used by dentists throughout the country through the application of further thoroughly tried out apparatus in present use by the profession of engineering.

—*The Engineer's Bulletin.*

Did you know that of the many kinds of reflectors tried out for the 10,000 powerful lights strung up at the site of the Hoover Dam, so that work could be carried on at night as well as in the day light, dishpans were found to answer the purpose better than anything else? It is another unusual economic engineering feat.