more accurate, and of broader scope, than few during past generations ever aspired to. But, the results do not stand out as prominently as the development of the institutions warrant. The reason probably lies in the fact that there is not provided in the curriculum, a corresponding training of executive ability and power to accomplish.

There are two ways in which people are disposed to size up executive ability. One is an assumption that it is a characteristic of all men, and that any one, properly trained in the principles underlying the accomplishment of an undertaking, has as good a chance as anyone else of bringing it to a successful completion. The other is that it is a rare gift from nature, and that the proud possessor succeeds, of necessity, in a position of responsibility.

In a sense, both are right, and both wrong. Executive potentiality is a gift from nature, but it is also possessed by every man. It requires, however, a training to bring it to a proper stage of usefulness, the same as does an aptitude for mathematics, drawing or music.

One curious feature about methods in our training schools is that there is no direct attempt to exercise and develop this executive talent, as has been, for ages, the custom in early education, when there is recognition of a natural gift for such attainments. Because of this, the young college graduate knows very little of business ability, what it is, or in what measure, small or large, he possesses it. In the case of the engineer, especially, he is not prepared for the work expected of him.

In an article entitled "Training for Action," published in a recent issue of *Popular Science Monthly*, Mr. H. W. Farwell, of Columbia University, refers to the claim of many schools and colleges that ample opportunity is given the student for the development of executive ability, both in the curriculum and in outside activities, and that there is every chance in college for a training in the management of affairs and in the handling of men, as required in later life. The writer points out that the real situation is different, and emphasizes the need for a revision of the courses to the end that the students may, before they graduate, ascertain some knowledge of their own potentialities as executives.

Referring, by way of illustration, to a young civil engineer of his acquaintance, he writes: "He could make long computations of stresses in girders for steel work, he could lay out beautiful curves for a railway line; but all his years of college had not trained him in the very practical problem of keeping busy and happy a party of sixty additions to the melting pot, knights of the pick and shovel. Where do the textbooks state that a young engineer should never allow such an occasion to arise that one of his dusky foremen calls him by a short and ugly name, or that, the occasion having arisen, he should promptly apply a sedative by means of a convenient pick-axe handle if he wishes to maintain his self-respect and his job?"

A FAVOR TO THE NEW MAYOR—"BOUNCE" THE ENGINEER."

The scene is laid in the municipal council chamber at Brockville, Ontario. The inaugural meeting of the new council is being staged. Enter his worship, the Mayor! His trusties follow. "Gentlemen, be seated." The daily press has it about as concisely as it can be put:—

> Brockville, Jan. 11.—The new municipal council at its inaugural meeting to-night discharged the city engineer, G. H. Bryson, on the casting vote of Mayor Donaldson. The latter, during his term last year, found considerable fault with the work of the official, and the new council, still two members short on account of the disqualification of the south ward representatives elected by acclamation, gave him the desired support, upon which he acted to bounce Mr. Bryson.

Question: Why bother with a vote in the case of such trivial matters?

PEAT BY-PRODUCT INDUSTRIES SUITABLE TO CANADA.

In a recent issue of the journal of the Canadian Peat Society, attention is drawn to the importance which development of the latent resources of Canadian peat bogs might readily assume if full advantage were taken of the new conditions arising from the war. The article refers to the world's production last year of sulphate of ammonia, estimated at 1,365,000 tons, worth about $80,000,000. This is a chief by-product of European peat plants, and is a valuable fertilizer worth about $60 per ton. Figures are given to emphasize the existence of extensive markets which might be supplied, in part at least, by Canada, and of the opportunity to capture some share of the trade of Germany and Austria in this product. It is stated that these two countries export over 120,000 tons annually. Canadian peat bogs are suitable for this industry, being rich in nitrogen, and British capitalists are already inquiring relative to the feasibility of establishing chemical works in Canada, providing a sufficient supply of peat can be guaranteed.

Apart from the potential value of our peat bogs, as a subsidiary source of fuel supply and for production of sulphate of ammonia, there are numerous other products such as alcohol, acetic acid, acetone, tar, tar oils, creosote, etc., which might form the basis of paying industries giving employment to many people.

CAST IRON TEST-BAR DIMENSIONS.

In a paper read before the Iron and Steel Institute (Great Britain) Mr. Geo. S. Hailstone describes some interesting investigations into the relation of the size of a cast iron test-bar to its strength. A number of test-bars were cast from mixtures of very weak to strong cast iron, 2⅛ by 1⅛ in. section, 42 in. long, and machined to 2 by 1 in. and tested on 36-in. centres. One of the broken halves of each bar was then machined to 1 by 1 in. and tested on 12-in. centres. The breaking load of the 2 by 1 in. bars ranged from 2,576 to 3,920 lb., and that on the 1-in. bars ranged from 2,240 to 3,416 lb. The ratio of the breaking loads of the two sizes of bars ranged from 1.142 to 1.166 for the whole series of 26 bars of each size, averaging 1.153. Another series of bars were cast to size, 2 by 1 in. and 1 by 1 in.; 15 bars of each were tested without machining, giving breaking loads ranging from 2,548 to 4,116 lb. for the 2-in. bars, and from 2,184 to 3,584 lb. for the 1-in. bars, the ratio of strengths ranging from 1.117 to 1.166, averaging 1.146. Mr. Hailstone concludes that the best standard cast iron test-bar, to give the most consistent and comparable results, both in breaking load and deflection, is one cast 2⅛ by 1⅛ in. 42 in. long, machined down to 2 in. by 1 in. section, and tested on 36-in. centres.