

AMONGST our illustrations this week will be found drawings of two remarkable objects in natural history, which have also appeared in the CANADIAN ILLUSTRATED NEWS. The Wolf-fish (*Anarrichas lupus*) is occasionally met with in the fish markets of London, but so far as we know, the present is the first specimen seen in Canada. It belongs to the family of the *gobies*. This strange repulsive fish has an elongated body covered with small scales, a long dorsal fin extends down the whole of the back. There are no ventral fins, and the pectorals are comparatively small, the head short and rounded, and the markings of it together with the position of the glaring eye and the long, sharp curved front teeth give it a fierce cat-like expression. The back teeth and those of the palate are specially adapted for crushing shell-fish, being close together and tubercular or rounded. In our engraving on page 124 a view of the inside of the mouth is given to shew the teeth. The present specimen measures three feet three inches, but the Wolf-fish attains occasionally to the length of eight feet or more. It is a native of the Northern seas, not uncommon on the shores of Greenland and Iceland, and occasionally appears on the North coast of Scotland and amongst the Orkneys. The Wolf-fish is really as ferocious as it looks, and often shews fight when imprisoned in a net, in a manner which renders its despatch exceedingly difficult. The general color is brownish gray with darker vertical bands on the back and intermediate spots, a whitish belly, and a triangular mark upon the top of the scull.

The other specimen alluded to is described in a letter from the Rev. V. Clementi of Peterborough, as follows :

FELIS LYNX.

This lynx, whose spoor, very different from that of the Canadian lynx, had been noticed for the last five or six years, was trapped in the middle of March, about 12 or 13 miles from the town of Peterborough.

It is small, fully seven or eight years old, and of the following dimensions: Length from ear to insertion of tail, 30 inches; height to shoulder, 20 inches; length of tail, 6½ inches. Color, reddish fawn, with indistinct blotches of brown; the inside of the legs lighter in color, with black stripes; a black stripe along the back; white spots at the back of either ear and under the chin and throat.

The animal was very fat and weighed 30 lb. It is known in the North-West as the "European Lynx."

Peterboro, March 29, 1881. VINCENT CLEMENTI, B.A.

ACTION OF AN INTERMITTENT BEAM OF RADIANT HEAT UPON GASEOUS WATER.—Such is the title of a book which Professor Tyndall has, within a few weeks, presented to the Royal Society. From the consideration of Mr. Alexander Graham Bell's experiment on the action of an intermittent beam of light upon solids by means of which musical sounds were produced, Professor Tyndall began a series of experiments upon the vapors of various chemical substances, such as the different ethers, ammonias, etc. The results were similar to Mr. Bell's, for in nearly every case sounds, ranging in their intensity with the different substances, were produced. After giving the results of his experiments in detail, he concludes: "With a very rude arrangement I have been able to hear the sounds of the more active vapors at a distance of one hundred feet from the source of rays. Several vapors other than those mentioned in this abstract have been examined, and sounds obtained from all of them. The vapors of all compound liquids will, I doubt not, be found sonorous in the intermittent beam. And as I doubt whether there is an absolutely diathermanous substance in nature, I think it probable that even the vapors of elementary bodies, including the elementary gases, when strictly examined, will be found capable of producing sounds."

Hints to Apprentices.

APPRENTICESHIP I.

The question of apprenticeship is one upon which there is still much difference of opinion, and it is one that in the past has caused many bitter contentions between employers and employed. Some portion of this strife was no doubt due to the restrictive rules of Trades Unions, by which they sought to limit the number of apprentices, and to prescribe the period for which they should be bound. But the restrictive rules alluded to were not invented by trades unionists; their origin must be sought far back in the pages of our history. To some extent these old customs survive to this day, as for example in the City of London and other ancient Corporate towns, where special privileges are accorded to the freemen thereof—not by purchase, as in the former case, but by servitude only, as in most of the latter—if not indeed in all, where that "freedom" is attainable under the Municipal Corporations' Acts. The freedom of a Corporate City or Borough at one time carried with it important privileges both political and social; in some cases these continue; in others the advantages are now chiefly social, but they are none the less important.

The primary object, and, indeed, the only real object, of the apprenticeship system was to ensure good craftsmen. As soon as it began to confer other benefits it became protective in its character. Later on, and incidentally as it were, it became mixed up with questions of wages, and here it was, mainly, that the disputes with regard to it first arose. The men regarded an influx of apprentices with aversion, inasmuch as they effected a displacement of adult journeymen, and afforded to the master a pretext for reducing, and a means whereby to reduce, wages. This led to disagreements, disputes, and strikes. When matters arrived at this stage the practical object of apprenticeship was unfortunately forgotten; "mastering the trade" was lost sight of, and the price to be paid for labour was dragged to the front. The consequence has been that learning a trade by a formal deed of apprenticeship or indenture has fallen into disuse, and nothing, comparatively speaking, has as yet been substituted in its stead.

It may be affirmed that the proportion of *skilled* men, in any given trade, is not so great now as it was formerly. Say that the percentage fifty years ago was in the ratio of 75 in the 100, the number would scarcely reach 50 in the 100 at the present time; indeed it is doubtful if the average reach anything like or near that mean. That we have in the mass a considerable body of thoroughly skilful and competent workmen no one can deny; that some of them far excel those of fifty years ago may also be true; but the question is, could an employer take at random any number of his men, and tell them off for a particular job, with the full confidence that all and each of them could undertake any and every part of the special branch of trade at which they worked, and by which they got their living? They reply would be in the negative in every department of industry in this country. But it might be said that the division of labour being now so much greater than it was formerly, a man is only expected to be an expert in one department of his branch. In some business this is so; but it does not apply to all; and it scarcely applies at all to the building trades generally, and where it does the cases are somewhat exceptional. For example, we should think a man a very poor mason who could not fix the stones that he had previously worked on his own banker. Yet it is well-known that a "stone-setter" acquires greater skill and expertness by doing fixing only, and on all large jobs fixers do nothing else, indeed a large number of them could not "take a banker" and work the stone which he is called upon to fix. So with the joiner, if he is constantly employed in making doors, or sashes, or other special work, he becomes more and more expert in this particular line; but as "a craftsman" he ought to be able to fix the frames and hang the doors or sashes that he has made if called upon to do so. But then he would be called a carpenter, and this, to a shop-joiner, would be considered *infra dig*.

If the division of labour is carried out to a great extent, it is evident that the time required for learning a section only of one branch is not so great as it would be if the learner had to acquire a knowledge of, and practical familiarity with, the entire branch of that trade; therefore, the term of apprenticeship ought to be shortened accordingly, or he ought to learn fully every branch of his own particular handicraft in all its essential details. This, however, is not practicable for an apprentice to do under existing circumstances, unless it be in very exceptional and favourable cases.