

seeds, if secured from damp, will remain sound a long time. Turnips, beet, cabbage and radish seed will keep for five or six years; beans nearly as long, if in pods; kidney-beans are good even the third year, if in pods also, otherwise they cannot be depended on after the first year; carrot seed will keep to the second or third year; in a word, it is of more consequence that seeds should be heavy, and of the colour which shows ripeness, than new. The best corners or places in the field where are the wheat, the barley, the oats, &c., should be selected for seed, and carefully preserved. Such care will do far more for the next crop than all changes of seed.—As soon as the wheat is cut down, every means should be employed to encourage the growth by the young Timothy Grass or Clover. It is not unusual for farmers to allow their sheep and cattle to browse and graze in such a field. This is exceedingly injurious to the coming hay crop, while it does little or no good to the cattle. It would even be of great advantage to put a little fine mould on the young shoots in the shape of top-dressing. The expense of all this will be amply refunded by the next crop of Hay.—In plucking the fruit off the trees in orchards, great care should be exercised; all should be hand-plucked, as it is called, and not shaken by force from off the trees. This method of shaking is exceedingly injurious not only in so far as the preservation of the fruit is concerned, but for the crop of the following year. The buds that are to blossom in spring are all formed the previous year. Many of them have grown side by side with the fruit, and when these are violently shaken off the tree, hundreds and thousands of the buds are destroyed. There is thus the strongest necessity for care in taking the fruit off the trees.—And now, too, is the time, as already hinted, for laying plans and making preparations for the following spring. This is the custom at home, and it ought far more to be the custom in this country, where the spring is so short. We are persuaded that nearly a third more might be made out of farming and gardening in this country were all done that could be done in autumn.—Taking into account the excellence of the climate in this country in autumn, it is more than a compensation for the very brief and oftentimes bleak weather in spring. This is the season that ought to be devoted to improvements.

SCIENTIFIC.

To the Editor of the Journal of Education and Agriculture.

REV. DR. FORRESTER,—

Sir,—I would now give the readers of your Educational Journal the promised details of the interesting Geological discovery reported in your last number. The Thecodont Saurian remains that I have found consist of twenty-one teeth, or ten pairs and a single one.

They were discovered in a coal mine on the property of Mr. Fraser, the locality being described by Professor Dawson, in his *Acadian Geology*, as “to the south east of New Glasgow near the new road to the Pine tree gut.” They were imbedded in a layer of Bituminous Shale, which is about two and a half feet thick and forms the roof of the mine. These Crocodilean remains were associated with small *Stigmaria* and *Calamites*, probably a part of the Saurian’s jungle. There were also Ganoid scales of various figure, and some of them of considerable size and thickness; teeth, small, sharp and conical; larger conical and longitudinally striated, coprolites or fossil excrements of fishes and other remains, probably of his victims.

I shall attempt to describe the appearance and properties of the teeth in question as intelligibly as I can. As I cannot have figures accompanying my description I shall refer to a figure contained in the valuable work already referred to, expecting that most of your readers who take an interest in such subjects have the *Acadian Geology* in their possession. Like those of the *Bathygnathus Borealis*, represented in Fig. 8, they are conical, compressed, recurved, *i. e.*, curved toward the gullet, serrated like a certain kind of sickle, but externally as well as internally, the two enamel

edges being thereby rendered better adapted for cutting, they present a similar transverse section, and their pulp cavity is elliptical.

They differ, however, from those figured in other respects. With one exception they are in pairs—there are two teeth for every root—in every pair the alternate teeth are similar in form, but are generally different in dimension—so that when *in situ* and counted toward the gullet, the first and third and second and fourth, &c., were of the same shape, but of varying size. The first of each pair when counted in the same direction is truncated, the crown is levelled externally and rounded, and it is recurved slightly; the second is not truncated and is very much recurved, and is about one half larger than the first: the two largest of this kind are rather more than two thirds of the size of Fig. 349 in the 4th Edition of Lyell’s *Elements of Geology*, and therefore they are each more than twice the size of the tooth of the *Thecodontosaurus* there represented. In every pair this relative proportion is observed. The two largest pairs are of equal size, and the remaining six pairs vary from about 7-8 to 1-8 of the size of the largest. They are all serrated, beginning a little below the crown and reaching within a little of the base: so that this Saurian monster appears to have been amply supplied with hooks for securing his Ganoid victim and weapons for dispatching it.

There is also something like a small tooth between the large ones of each pair, which, when broken near the root, presents a circular cross section.

The shape of the root is somewhat singular: it projects inward in the form of a triangle with its vertical angle rounded and the teeth rising laterally from the base: a flattened heart-shaped prominence a little removed from the teeth, with its point extending to the rounded vertex, occupies the greater part of the surface of the root: viewed in profile it appears of considerable depth, and from the middle of its under base there is a downward projection, jutting out considerably beyond the outside of the teeth: so that these formidable instruments of death must have been firmly planted in their sockets, and in every way fitted for their destructive office. From their similarity of direction in regard to their roots they all appear to have belonged to the left side of the lower jaw, or to the right side of the upper, or partly to both—if they belonged to one jaw, as is not improbable, it must have been as well supplied with teeth as the great Gavial of the Ganges.

I have referred to one of the number as single: this tooth has a root for itself—this root in the specimen can only be seen in profile, it wants the downward projection which the others have and the heart shaped projection, and appears to be oblong rather than triangular: the tooth is compressed, recurved and serrated: is shaped like a pruning hook, faces toward the root and is about 1/4 of the size of the largest tooth, so that it appears to have been a frontal tooth. We have, therefore, in all a frontal tooth and twenty lateral teeth of this Saurian. I had hoped to meet with more of its remains, but, unless they be found in one or other of the mines that are or may be opened in the neighbourhood, there is no probability of this hope being realized, as the mine where these remains have been found is exhausted, abandoned, and being rapidly filled with water.

From the preceding description it will appear evident to any one who has studied such subjects that the teeth which we have discovered have, as we have assumed, belonged to a reptile of the Saurian family. We do not, however, presume to affirm that this discovery has added a new reptile to the few of this class which have been found in the Lower Carboniferous System. We shall leave this to be decided by a competent comparative anatomist. I intend to send a pair of the teeth to Dr. Leidy of Philadelphia and endeavour to receive his opinion on the subject.

Here then we have another fact subservive of the progressive development hypothesis. In one of the oldest sepulchres of the animal world the remains of a reptile of a high order of organization have been found, where, according to this monstrous theory, no such remains could possibly exist.