CONCRETE BUILDINGS.

SIR,—A correspondent asks some questions relative to con-Crete buildings. If timbers are of large dimensions it would be better—at any rate in most cases—to leave cavities for their insertion afterwards; if this cannot well be done, then immerse their ends in water, so that they may expand previously to being built in. In timbers of small scantling no precautions are, as a rule, necessary, and the walls must certainly be stronger than when left full of holes. The ballast should be screened if any portion would not pass through a 3-in. mesh sieve or screen, and for thin walls a smaller mesh is preferable.

For concrete in the proportion of seven of ballast to one of Cement, by measure, a fair price would be from 10s. to 13s. per cubic yard, depending on the local price of labor, and of cement delivered on works; also if the contractor has to find his own appliances. "Concrete and its Use in Building" (Spon & Co., 48 Charing-cross) treats more fully the different questions asked by "Concrete." THOMAS POTTER.

LARGE SAWS.

SIR, — My attention has been drawn to the following extract from your valuable paper, which appeared in the gleanings of the Birmingham Daily Post, 27th August, 1877 :--

"The Builder says a saw 54 feet long by 18 inches wide, intended for use on large trees in California, has just been turned out of Beaver Falls Steelworks."

Now, sir, this may either be a mistake, or else another speci-men of American "tall-talk ;" but as some of your readers who are unacquainted with the saw trade may be misled by it, and knowing how anxious you are that no misstatements should apbear in your journal, I take the liberty of correcting the article. I am myself warmly interested in the manufacture of these band or endless saws, and know from experience that a saw 54 feet by 18 inches wide would be positively useless, even if made from one piece and properly hardened; and provided that an American firm has "turned out" such a saw, it certainly was never in-tended for work. I am, however, strongly inclined to doubt the statement that this is the case, for, as far as my knowledge of American saw manufacture goes, I am almost certain that no one of their houses could produce such a large piece of work. Of course, any steel roller could make a number of small pieces. and then weld them into one big sheet; but up to the present, he largest saws rolled from one single piece which have ever been made were manufactured by the most celebrated French house in the trade for the American market, and though these saws (measuring 45 feet by 12 inches by 8 W. G.) were simply Perfect, yet on being tried it was conclusively proved that such Sigantic tools were not by any means so useful as smaller ones of about the dimensions of 54 feet by $4\frac{1}{2}$ -6 in. by 12-16 W. G. These narrower saws, I will guarantee, are capable of cutting more easily through as large trees as any 18 in. saw, such saws having only twelve more inches of steel in width, which not only does no work, but into the bargain hinders the play of the machinery. I have visited contractors and engineers in New York, Chicago, Philadelphia, Cincinnati, Quebec, Ottawa, &c., and every one has agreed with me that with saws of a comparatively small size a larger amount of work can be got through in the time than with the largest tools. Therefore if an American house has by dint of employing all its energy and skill succeeded in producing a saw of such dimensions as those you state, it has simply wasted its time, for, profiting by the experience acquired by older houses from a long series of experiments, it should first endeavor to successfully compete with those older firms in articles fit for use, and not to bring forth an article fit only for exhibition in a show-room. They would then, perhaps, take away Part of the trade I am carrying on with their own country in band and handsaws, which I alone send over to them in hundreds and tons respectively. AD. ARBENZ.

** Mr. Arbenz's opinions may be quite correct, but they by no means prove that our paragraph was a misstatement.—The Builder.

To PRESERVE FRUIT WITHOUT SUGAR. — Pick any kind of fruit not dead-ripe, and put it into wide-mouthed bottles; set the bottles in kettle, with cold water up to their necks, place them over the fire, and when the fruits begin to sink, take off the kettle: when cold, fill up each bottle with boiled spring water, cold; cork the bottles and lay them on their sides, or set them with the corks downwards in a rack. Or the fruit in the bottles may be set in an oven after the bread is drawn, and let stand till shrunk a quarter part, when the bottles should be corked closely.

SCIENCE AND THE SEA SERPENT.

Professor Proctor, the well-known English astronomer, has an inclination toward a belief in the sea serpent, which has taxed people's credulity for so long a time. In the *St. Nicholas* he writes :---

I think it may interest your readers to jot down a few facts-some of which are not commonly known, I believe, while others are commonly overlooked or forgotten.

I. A great number of foolish stories have been told about the sea serpent by anonymous hoaxers; so that,

2. Persons of known name are apt to be ashamed, rather than otherwise, to describe any sea creature (or appearance) which they suppose to be the sea serpent. Yet,

3. In 1817, eleven Massachusetts witnesses of good repute gave evidence on oath before magistrates (one of whom corroborated the evidence from his own observation) about a serpentine sea creature 70 or 80 feet long, seen in some cases within a few yards. It presented all the features afterward described by the officers of the *Decdalus*.

4. In 1833, five British officers recorded a similar experience.

5. In 1848, the captain of a British frigate sent to the Admiralty an official description of such a creature, seen (by himself and his officers) travelling past his ship, close by, so that he "could have recognized the features" of a human person at the distance "with the naked eye."

6. Captain Harrington and his officers saw such a creature in 1858, under such circumstances that he says: "I could no more be deceived than (as a seaman) I could mistake a porpoise for a whale."

7. The story last related, marvellous though it is (rejected on that account, when first received, as a probable hoax), has been deposed to on oath by all who were on board the *Pauline* at the time. The captain of the *Pauline* writes me that, instead of being anxious to tell the story, he and his officers and crew were in twenty minds to keep it to themselves, knowing that they would be exposed to ridicule and worse.

8. It is certain that creatures of the kind—*i.e.* not sea serpents, which few believe in, but sea saurians, were formerly numerous.

9. Of other creatures numerous at the same time, occasional living specimens are still found.

10. Agassiz states that it would be in precise conformity with analogy that such an animal as the enaliosaur should exist still in the American seas.

11. Of several existant sea creatures only very few specimens have ever been seen (in some cases only one.)

With these and like facts before us, we may believe that the above mentioned observers were deceived, and doubt whether any enaliosaurs continue to exist. But there is no scientific reason for denying the possibility of their existing and being occasionally seen. The foolish stories told by hoaxers have no bearing on the case one way or another. At least, they *should* have no bearing with those that can reason aright.

ABOUT TEA .--- Twenty years ago China was practically the only tea-growing country, but to-day she has two formidable rivels looming up-India with black, and Japan with green teas-and it is said that the Indian article is preferred to that of China in England, and Japan tea is to China green in some sections of our own country. The whole production of India is taken by England, while the entire product of Japan is taken by the United States. The area of cultivation of the tea plant is said to be rapidly extending, both in China and India, while the consumption outside the sources of supply, is chiefly confined to the Saxon and Anglo-Saxon races, the Latin race using very little. The changes in the means of transportation in late years are indicated by the fact that no less than 80,000,000 pounds of the whole 103,000,000 shipped from China to England and the United States last year was by steam against only 15,000,000 by sail, whereas twenty years ago the carriage was confined to sailing vessels. From present indications there is another year of cheap tea before us, private cables having already noted the fact both the China and Japan markets for new crop have opened lower, while general trade the world over continues in a more or less depressed condition. Indeed, if the production of tea shall con-tinue in excess of the consumption, it would seem that prices are destined to continue permanently low.

ATHLETIC SPORTS FOR LADIES.—1. Jumping at conclusions; 2. Walking round a subject; 3. Running through a novel; 4. Skipping dull descriptions; 5. Throwing the hatchet; and during the holidays; 6. Boxing the ears of troublesome young brothers.