as a column of air would be, thirty miles high, and as dense all the way up as it is here."

"What makes it grow thinner and thinner towards the top?" said Rollo.

"Because," said his father, "that which is near the top, has not as much load of air above it, to press it down."

"And that which is *at* the top," said Rollo, "has none above it to press it down."

"No," replied his father.

"And how thin is it there?"

"Nobody knows," said his father.

"What, nobody at all?" said Nathan.

"No, I believe not; at least I do not; and I don't know that anybody does."

"How do they know, then, how high it is?" said Rollo.

"The philosophers have calculated in some way or other, though I don't exactly know how. I believe they have ascertained how great the pressure of the air is here at the surface of the earth, and have calculated in some way, from that, how high the air must be to produce such a pressure."

"And how high must it be?" said Nathan.

"Why, between thirty and forty miles," said Rollo; "father told us once."

"And yet," continued his father, "water thirty or forty feet deep, would produce as great a pressure as a column of air of thirty or forty miles. That is, the air around presses about as heavily, and would force a jet of air through a hole with about as much force, as water would, coming out at the bottom of a dam, as high as a common three-story house."

These explanations were all very interesting to Rollo and to his mother; but Nathan found it rather hard to understand them all, and he began to be somewhat restless and uneasy. At length he said,—

"And now, father, haven't you almost done telling about the air?"

"Why, yes," said his father; I have told you enough for this time; only you must remember it all."

"I don't think I can remember it quite all," said Nathan.

"Well, then, remember the general principle, at any rate," said his father, "which is this—that we live at the bottom of a vast ocean of air, and that the lower portions of this air are pressed down by the load of the air above; that, being so pressed, the lower air is condensed,—so that we live in the midst of air that is pressed down, and condensed, by the load of all that is above it; and that consequently, whenever the air is taken away, even in part, from any place, as you removed some of it from the china closet, the pressure upon the air outside forces the air in through every opening it can find."

"I think that is a little too much for me to remember," said Nathan.

Nathan's father and mother laughed on hearing this, though Nathan did not know what they were laughing at. His father told him that he could not expect him to remember all; and that, to pay him for his particular attention, he would tell him a story.

A Mother's Last Present.

The following affecting story was related by Mr. Dudley, an agent of the British and Foreign Bible Society, at the anniversary of the Birmingham Sunday School Union:

In the county of Kent lives, or lived, a clergyman and his lady, who took a very active part in the Sabbath school connected with his church. They had in the school a boy, the only son of a widow, who was notoriously wicked, despising all the earnest prayers and admonitions of the clergyman, who, out of pity for his poor widowed mother, kept him in the school eighteen months: at length he found it absolutely necessary to dismiss the lad, as a warning to others. He soon after enlisted as a soldier in a regiment that was soon ordered to America, it being during the last American war. Some time after, the poor widow called upon the clergyman to beg a Bible of the smallest size. Surprised at such a request from an individual who was evidently on the verge of eternity, and who he knew had one or two Bibles of large print, which she had long used to a good purpose, he inquired what she wanted it for. She answered, "A regiment is going out to America, and I want to send it to my poor boy; and oh, sir, who knows what it may do!"

She sent the Bible which the clergyman gave her, by a pious soldier, who, upon arrival at their destination, found the widow's son the very ringleader of the regiment in every description of vice. After the soldier had made himself known, he said, "James, your mother has sent you her last present."

"Ah!" he replied, in a careless manner, "is she gone at last? I hope she has sent me some cash."

The pious soldier told him he believed the poor widow was dead: "but," said he, "she has sent you something of more value than gold or silver, (presenting him the Bible); and James, it was her dying request, that you would read one verse, at least, of this book every day; and can you refuse her dying charge?"

"Well," said James, "it is not too much to ask, (opening the Bible,) so here he goes."

He opened the Bible at the words, "Come unto me all ye that labour and are heavy laden, and I will give you rest."

"Well," said he, "that is very odd. I have opened to the only verse in the Bible that I could ever learn by heart, when I was in the Sunday school; I never could, for the life of me, commit another. It is very strange! But who is this *me* that is mentioned in the verse?"

The pious soldier asked if he did not know?

He replied he did not.

The good man then explained it to him; spoke to him of Jesus; exhibited the truth and invitations of the gospel. They walked into the house of the chaplain, where they had further conversation: the result was, that from that hour he became a changed man, and, was as noted for exemplary conduct as before he had been for his wickedness.

Some time after his conversion, the regiment in which he was, engaged with the enemy; at the close of which the pious soldier in walking through the field of blood, beheld, under a large spreading oak, the dead body of James, his head reclining on the Bible, which was open at the passage, "Come unto me all ye that labour," &c. Poor James had gone to his eternal rest.

Mr. Dudley said he had frequently held the Bible in his hand: there was no less than fifty pages stained with the blood of poor James. How encouraging, said Mr. D., is this for Sabbath-school teachers to persevere! for should there be but one seed sown, it might, as in the case of the widow's son, produce a plentiful harvest. The only verse he ever committed to memory, was the means, in the hand of the Holy Spirit, of bringing him out of darkness into marvellous light; and James is now, we trust, joining the song of the redeemed in heaven.

AGRICULTURE.

Progress of Scientific Agriculture.

(*Continued from page 95.*)

[The following is a further extract from an extremely important article of the last *Edinburgh Review*.]

There were not wanting many indeed who opposed this view, and quoted cases in which these substances had been employed for a long series of years without producing such injurious effects; but still, agricultural feeling and opinion were against them, and they have as yet but partially prevailed. Even the introduction of nitrate of soda from Peru, at a comparatively cheap rate, and the publication of the remarkable effects it was seen to produce, have been unable to bring these mineral substances into general favour. Since the introduction of guano, nitrate of soda, as an application by itself, has been almost forgotten; and bones, rape cake, and guano, all of which are considered as true manures, are still the main dependence of those who cultivate their lands by the aid of portable manures.

This unwillingness to employ, or to rely, upon saline substances as manures, has been aided by another series of observations of great interest, and of important practical consequence—the true explanation of which is even now but little understood by practical men. The scientific investigation of them, however, has led to the discovery of the most beautiful physiological principles, and to the clearest demonstration of the value of chemical science to agricultural practice.

It was found, for example, that though in some countries, and upon some soils, the use of gypsum, saltpetre, common salt, and other similar substances, produced strikingly beneficial results, yet that upon other soils, and in other localities, they produced no sensible effect at all. How was this to be accounted for? If these substances merely acted as stimulants, why were they incapable of stimulating a poor and laggard crop in one soil as well as