

Correspondence.

Half Century Readers of the Scientific American.

To the Editor of the SCIENTIFIC AMERICAN :

If the following is of interest to you, you are at liberty to use it as you may wish.

When a young man in my twentieth year I was book-keeper in one of the largest manufacturing establishments in our city, and was so interested in your paper that I asked our workmen to subscribe and sent you their names. About that time I was librarian in the Mechanics' Library, thus bringing me in contact with many mechanics. I then began, as a young man, to take your paper and have continued a subscriber ever since, now fifty-one years. Have you an older one?

CHARLES W. JENCKS.

Providence, R. I., February 4, 1897.

To the Editor of the SCIENTIFIC AMERICAN :

This is the commencement of my fifty-first year's reading of the SCIENTIFIC AMERICAN. When I first met him, he was quite a little fellow, but, in wisdom and knowledge, far beyond his years. Now he is the most fully developed giant in the arts and sciences the world has yet produced. What will he be by the end of the next century? Who can answer?

I inclose money order for \$3, to renew my subscription. J. R. MABEN.

Bedford Springs, Va., January 1, 1897.

Another correspondent writes: "I believe I have all or nearly all the numbers since the first issue in 1845. My brother, who died in 1858, was a subscriber from the beginning. After his death I continued it, with some intermissions during my absence in California and during the war. I, however, always sent for back numbers and in that way have complete files."

[The letters printed herewith, touching the much mooted question as to the oldest living subscriber, have been received by us in our ordinary mail. We are not able to determine the question of priority, owing to the destruction of our books in the great Park Row fire in 1882. The subject is evidently one of interest to our readers, and it is a curious coincidence that the three letters printed above should have been received by us at almost the same time without suggestion or solicitation on our part.—ED.]

Agriculture for a Year.

The annual report of Mr. J. Sterling Morton, Secretary of Agriculture, has been received, says the American Manufacturer.

It appears that since March 7, 1893, the civil service regulations have been extended until they now include "every important permanent position in the United States Department of Agriculture." "This department," says the secretary, "has for its object the discovery, investigation, development and utilization of the agricultural resources of the United States. Primarily it is a scientific or technical department." The secretary rightly says that the functions of this department have little or no relation to political policies or expedients. Its useful work should go ahead year after year systematically. There are now on the pay rolls of the department 2,217 men and women, a reduction of the force of 280 since 1893, in spite of the fact that the work has increased. This reduction was made possible, Secretary Morton says, because of the improvements effected by the law extending the classified civil service.

"The bureaus and divisions in Washington," the report continues, "are, contrary to the popular idea, much the smaller part of the Department of Agriculture. Outside of Washington there are 154 observing stations and 52 signal stations of the Weather Bureau. There are 152 meat inspection stations in the country; 21 different quarantine stations, for import cattle at points on the coast, the Canadian and Mexican boundary; 9 different stations for inspecting import stock and 19 for inspecting stock for Texas fever, making a total of nearly 200 stations in the Bureau of Animal Industry, which should have inspection and supervision occasionally by the highest authority of the department. The agricultural experiment stations, located in different States and Territories, and several experiment stations of the Department of Agriculture, must be inspected by this department. In addition to these the department has many other agencies for studying soils, foods and food dietaries, testing timbers and collecting material, illustrating our natural resources scattered all over the country."

The secretary advises that an additional executive officer shall be employed, who shall have general supervision of all the work of the department. This officer should be, the secretary says, "a broadly educated, scientific man." He also calls attention to the fact that the salaries of the higher officials in the department are at present inadequate, young men being drawn away from the government service constantly to accept higher salaries offered by universities, colleges and scientific schools.

"Agricultural colleges and experiment stations are

teaching the science of agriculture," the report continues, "but they are not generally teaching farm economics and the importance of markets." With this latter end in view, Secretary Morton organized on March 20, 1894, the "Section of Foreign Markets," one of whose admirable publications, relating to Sweden, was noticed in the last number of the Manufacturer. This section not only publishes a regular series of bulletins and circulars, but it furnishes information in response to special inquiries.

The secretary is of the opinion that the distribution of seeds to applicants is a wasteful expenditure on the part of the government, and he is certainly not alone in this view. The report says: "The seeds distributed gratuitously by the government during the fiscal year closing on the 30th of June last weighed a little over 230 tons. The cost of carrying them through the mails was over \$70,000. They occupied 30 mail cars in transportation. Careful computation shows that the seeds sent out by the Department of Agriculture during the year would have planted 21,038 acres of cabbage, 10,768 acres of lettuce, 10,712 acres of tomatoes, and other garden vegetables in proportionately large areas. Briefly, the seed gratuitously sent about the country would have planted more than 115 square miles of garden. In other words, it would have planted a strip of ground one rod in width and 36,817 miles in length. Such a strip would reach one and a half times around the globe, and a passenger train going at the rate of 60 miles an hour would require 51 days 3 hours and 14 minutes to travel from one end of this gratuitously seeded truck patch to the other. Each congressional quota contained seed enough to plant more than 163½ acres."

Mr. Morton concludes his report as follows: "The question for American farmers and all other citizens engaged in gainful occupations to consider is: How can the United States supply the markets of the world with staple food product and necessary articles of manufacture? . . . It is probably quite safe to declare that at least 2,000,000 of American workmen, on farms and factories, subsist almost wholly upon employment based upon foreign demand for American commodities. And in this contest for feeding and furnishing mankind—notwithstanding the fierce competition which meets us all over the globe—American agriculture, manufacture and commerce are steadily gaining more trade, and thus furnishing an enlarged wages fund on a gold basis out of which many thousands of American laborers and skilled artisans draw their yearly remuneration, and upon which they and their families largely depend for employment and comfort."

Footwear Nevers.

Dr. Samuel Appleton, in Health Culture, gives fourteen of them, which every person will derive comfort in heeding:

1. Never wear a shoe that will not allow the great toe to lie in a straight line.
2. Never wear a shoe with a sole narrower than the outline of the foot traced with a pencil close under the rounding edge.
3. Never wear a shoe that pinches the heel.
4. Never wear a shoe or boot so large in the heel that the foot is not kept in place.
5. Never wear a shoe or boot tight anywhere.
6. Never wear a shoe or boot that has depressions in any part of the sole to drop any joint or bearing below the level plane.
7. Never wear a shoe with a sole turning up very much at the toes, as this causes the cords on the upper part of the foot to contract.
8. Never wear a shoe that presses up into the hollow of the foot.
9. Never have the top of the boots tight, as it interferes with the action of the calf muscles, makes one walk badly and spoils the shape of the ankle.
10. Never come from high heels to low heels at one jump.
11. Never wear one pair of shoes all the time, unless obliged to do so. Two pairs of boots worn a day at a time alternately give more service and are much more healthful.
12. Never wear leather sole linings to stand upon. White cotton drilling or linen is much better and more healthful.
13. Never wear a short stocking, or one which after being washed is not, at least, one-half inch longer than the foot. Bear in mind that stockings shrink. Be sure that they will allow your toes to spread out at the extreme ends, as this keeps the joints in place and makes a strong and attractive foot. As to shape of stockings, the single digital or "one-toe stocking" is the best.
14. Never think that the feet will grow large from wearing proper shoes. Pinching and distorting makes them grow not only large but unsightly. A proper, natural use of all the muscles makes them compact and attractive.

THE elevation of Sir Joseph Lister to the peerage has been received with great satisfaction by the scientific world, and is an honor not only to his profession but to the Royal Society as well.

Science Notes.

Sir Joseph Lister on being raised to the peerage has selected the title of Lord Lister.

Physiological uses of the Roentgen rays have so increased that the publication of the Archives of Clinical Skiagraphy has been begun in London.

We learn from Natural Science, of London, that the Roentgen rays have been applied to fossils embedded in chalk, and the photographs obtained have been very successful.

Heinrich Gätke, who, in fleeing from Prussian political persecution in 1848, was wrecked on Heligoland, and spent the rest of his life there, marrying a native, painting marine views, and watching the flights of birds over the island, has just died at the age of 83. His collection of migratory birds is in the South Kensington Museum. He held the place of government secretary until the English gave up Heligoland.

The Bressa prize of the Royal Academy of Sciences of Turin will be awarded in 1899. The value of the prize is nearly \$2,000. It will be given for the most important scientific work produced during the years 1895-98. The term will be closed at the end of December, 1898. The competitors must send their contributions in print before the above stated time. The prize may, however, be awarded to a non-competitor if he is considered the most worthy to receive it.

The following are the calculated illuminating values of mantles made from the oxides named per cubic foot of gas: Thoria (commercial) 6.0; thoria (pure) 1.0; zirconia (commercial) 3.10; zirconia (pure) 1.5; ceria, 0.9; yttria, 5.2; lanthania, 6.0; erbia (commercial) 1.7; erbia (pure) 0.6; alumina, 0.6; chromium oxide, 0.4; barium oxide, 3.3; strontia, 5.5; magnesia, 5.0. Ceria gives a reddish-yellow light. Erbia, zirconia, and oxide of barium, a yellow light. Alumina, a whitish yellow. Strontia and magnesia, a white light.

Austria proposes to introduce radical innovations into its university systems. Students' fees are to go to the government instead of to individual professors, while professors' salaries throughout the empire are to be equalized. Moreover, well known professors are to be distributed among the provincial universities instead of being retained at centers like Vienna and Prague, in order to check the flow of provincial students to the great cities. The result will be the establishment of a system of higher instruction, somewhat resembling that in American colleges. Objection is made to the scheme on the ground that it interferes with the German theory of Lehr and Lern-freiheit, and that it gives the government too much power over the higher education.

The Department of Agriculture has detailed Prof. H. J. Webber, of Eustis, Fla., to make an investigation of the plant known as the water hyacinth, which has come so near blocking navigation in the St. John's River tributaries. Until last September little attention had been paid to the steady increase in the growth of the water hyacinths on the St. John's River. At that time a member of the Jacksonville Times-Union staff made a trip up the river, and at once began calling attention to the obstruction to navigation of the river by the hyacinths. Since that time the matter has been taken up by the War Department and the Agricultural Department, and it now looks as though something might be done to rid the river of the plants.

Two Danish officers, MM. Oloufsen and Philipsen, have just arrived in St. Petersburg on their return from a journey of exploration to the Pamir country, where they reached places hitherto untrodden by Europeans. They met tribes who are still fire worshippers and totally uncivilized. The men of these tribes and even their animals are very small, the bulls and cows being no larger than a European foal, the donkeys about the size of a large dog, and the sheep about as large as a small poodle. Money is unknown to them, and their only trade consists in the bartering of furs. Women are bought at the rate of five or six cows or fifteen sheep apiece. These natives are very timid. MM. Philipsen and Oloufsen have secured numerous scientific collections, which they intend presenting to the Natural History Museum in Copenhagen.

According to Dr. W. O. Atwater, of Wesleyan University, in 25 cents' worth of various foods there are the following nutritive values in each: In 10 pounds of cornmeal there are more than 8 pounds of actual nutriment; in 8½ pounds of wheat flour there are over 6¾ pounds of nutriment; in 5 pounds of white sugar there are 4½ pounds of nutriment; in 5 pounds of beans there are 4 pounds of nutriment; in 20 pounds of potatoes there are 3¾ pounds of nutriment; in 25 cents' worth of fat salt pork there are 3½ pounds of nutriment; in the same value of wheat bread there are 2¼ pounds; in the neck of beef 1¾ pounds; in skim milk cheese 1¾ pounds; in whole milk cheese more than 1½ pounds; in butter 1½ pounds; in smoked ham and leg of mutton about the same; in milk over 1 pound; in mackerel about 1 pound; in round of beef ¾ pound; in salt codfish and beef sirloin about ½ pound; in eggs at 25 cents a dozen about 7 ounces; in fresh codfish about 6 ounces, and in oysters at 35 cents a quart about 3 ounces.