

united interest of themselves, and pomological science.

It is hoped that the Pomological Societies of the several States, and individual cultivators generally, will co-operate in an effort to place before the world creditable evidence of the resources and capacity of the country in respect to fruit culture and products.

The Exhibition will open in Philadelphia on the 10th day of May, 1876, and close the 10th day of November following.

LILIUM AURATUM.

The following letter, describing the very successful cultivation of this magnificent flower on the shores of Cape Cod, will be read with interest, proving, as it would seem, that a light soil and thorough drainage are necessary to bring it to its highest state of perfection. I have not before heard of so fine a specimen on this side of the Atlantic:

In accordance with my promise, I herewith send you the statement regarding the growth of the *Lilium auratum* at Cohut, 1874, and other circumstances which seem to bear upon the case.

Mrs. Augustus T. Perkins began to cultivate the *Lilium auratum* in her garden at Sandanwood so early as 1871.

The position of the garden is on a bluff fifty-five feet high, overlooking Cohut Bay to the Northwest, and distant from the edge of the bank about forty feet. The garden is surrounded with yellow pine trees. The original soil is mere sand, producing nothing but pine and dwarf oak.

After the garden was laid out the sand was moved from the beds to the depth of two feet, leaving the spaces round them for paths. The beds were filled with a compost made of black mud, dug from a pond mixed with the sand taken from the beds, and enriched with manure from stables near at hand.

All the bulbs did well, some reaching three or four feet in height, and having from fifteen to twenty fine flowers on the best plants.

The lily which has caused some attention, owing to the size it attained in the Autumn of 1874, and which was exhibited at the Fair at Barus Hill, threw up three shoots which still stand (Feb 17th, 1875) and by careful measurement reach the extraordinary height of seven feet and eleven inches. When on exhibition, it had sixty-one flowers, and Capt. Wm. Childs, who prepared it for the fair, says that it had already lost three, and that it bore 64 flowers in all.

The well at Sandanwood which is near the garden is dug through fifty-five feet of clear sand, free from stones, and with faint traces of iron in it. This shows the character of the soil to its whole depth. — *Gardener's Monthly*.

AGRICULTURAL MACHINERY AT THE CENTENNIAL.

The Centennial Commission is making thorough provision for the reception and display of agricultural machinery and implements.

A section of the Agricultural Hall, an imposing structure covering ten acres, will be set aside for the exhibition of farm appliances, and it is anticipated that this feature will be second to none in the agricultural department of the International Exhibition.

It will be evident to the manufacturers of agricultural machinery that as this national exhibition, is also open to the competition of the whole world, which has been invited to participate, our past progress and present position will be closely scrutinized, and we shall be judged by the general average:—Therefore, the admission of any object will be granted only when it possesses a character of unquestionable worth, and in the case of machinery, under the ruling of the Commission, the elements of merit are held to include considerations relating to "originality, invention, utility, quality, skill, workmanship, fitness for purpose intended, adaptation to public wants, economy, and cost."

Within the Agricultural Hall will be steam power and all necessary appliances for driving all such machinery as cotton gins, sugar presses, plantation mills, threshers, fanning mills, &c.

It is contemplated to test in the field, plows for animal and steam power, reapers, mowers, tedders and hay rakes.

Manufacturers designing to compete in the field will be required to use the same machines as they offer on exhibition.

The list of articles within the Hall was published on Jan. 5th, 1876, and ends on May 1st, the exhibition opening on May 10th, and continuing six months.

Inquiries may be addressed to the Chief of Bureau of Agriculture, Philadelphia.

UTILIZING FRUITS.

(From the Transactions of the Illinois State Horticultural Society, as reported in "Western Horticulturist.")

The report upon utilizing fruits is of general interest, for who does not, at the present day, use fruit or its products in some form or other, even to hard cider. The work upon the report was divided among the committee. Mr. Periam of the committee spoke upon the preservation of orchard fruits in their natural state, and of drying and canning. In treating this division of the subject, Mr. P. said:

All that is necessary in order to keep

fruits perfectly, in fresh or natural state, is to place them in a dry, pure atmosphere, at a temperature of thirty-five to thirty-eight degrees. This has been accomplished by the plan of Prof. Nyce, and also in Schooley's preservative, the essential features differing in no great degree. The plan adopted by Prof. Nyce was to keep the temperature of the room at thirty-four degrees, and the atmosphere dry by means of the refuse of salt works, chloride of calcium, commonly called "bitterns." It is thus stated by Prof. Nyce:

"In a room or any confined vessel when filled with fruit in the gradual process of ripening, carbonic acid and water are constantly being generated. Six pounds of carbon and one of hydrogen will take up all the oxygen contained in one hundred and twenty pounds of air. The oxygen, especially if the fruit be ripe and the room warm, will usually be consumed in forty-eight hours. The atmosphere would then be made up of the nitrogen of the air and carbonic acid. The former is destitute of all active properties, good or bad. The latter is not found to have any action on fruit immersed therein. Hydrogen and carbon then cease to be evolved from the fruit, as there is no agent to unite with them, in the same way that they cease to be evolved from a burning candle when air is removed. Decomposition ceases in both cases, from the same cause."

It is simply the application of a principle laid down by Leibig, who says:

"Decay is much retarded by moisture, and by the substance being surrounded with an atmosphere of carbonic acid, which prevents the air from coming in contact with decaying matter."

From this it would appear that the more perfectly the fruit is ripened, the better it will keep, care being taken that it be not overripe, the process of after ripening being a purely chemical process, the starch being gradually converted into sugar, for, however much starch a green fruit may contain, it is gradually changed during the process of ripening, until not a trace of starch may be left; for again Leibig says: "The more starch the green fruit contains, the more sugar will be evolved during the process of ripening."

The same principle was used in the plan not long since promulgated, the invention being to place the fruit in water-tight packages, and fill the interstices with carbonic acid gas, but as a matter of course, the plan did not work except in theory.

The fruit houses of Mr. Nyce were two-story buildings, the upper chamber containing ice, the sides and floor being double, three feet thick and filled in with some nonconductor, so that the fruit room should be practically air-tight. The