

Scientific and Useful.

NUT CAKE.—Whites of five eggs; sugar two cups; butter, one cup; sweet milk, one cup; flour, three cups; baking powder, three teaspoonsful; one cup of hickory nuts and one cup of black walnut meats chopped fine.

MUTTON SOUPS.—Boil a leg of mutton three hours, season with salt and pepper, add a teaspoon summer savory; make a batter of one egg, two tablespoons of milk, two of flour, all well beaten together; drop this batter into the soup with a spoon and boil three minutes.

THE HEREDITY OF ALCOHOLISM.—The distinguished scientist, Maudsley, thus describes the heredity of alcoholism: "Drunkenness in the parent is a cause of idiocy, suicide, or insanity in the offspring; as also insanity in the parent may occasion dipsomania in the offspring; which conclusively proves the deep-seated deterioration of the nervous system arising from drunkenness, the close attendant of pauperism."

As a result of careful experiments in feeding stock, it has been found that in moderate weather they require about two and a-half pounds of hay per day, or its equivalent in other fodder, for every 100 pounds of their live weight to sustain the vital functions and prevent them from losing flesh. All that is gained in the way of milk, flesh, or wool, is derived from the food consumed beyond this amount.

BOILED BREAD PUDDING.—Crumb your stale bread in a pudding-pail and cover with sweet milk and set by the stove to warm and soften. Then to every quart of the mixture add two well-beaten eggs, a cup of sugar, and a handful of raisins, or sweet dried fruit of any kind. Do not have your pail full, as it needs some room to rise. Put the cover on tightly, and set it in boiling water, and do not allow it to stop boiling till done. If you try that once you will never make a boiled pudding again.

IMMENSITY OF SPACE.—In a recent lecture delivered in Edinburgh, on the "Stars," Prof. Grant gave a graphic idea of the immensity of space. He said a railway train travelling night and day, at the rate of fifty miles an hour, would reach the moon in six months, the sun in 200 years, and Alpha Centauri, the nearest of the fixed stars, in 42,000,000 years. A ball from a gun, travelling at the rate of 900 miles an hour, would reach Alpha Centauri in 2,700,000 years; while light, travelling at the rate of 185,000 miles a second, would not reach it in less than three years. Light from some of the telescopic stars would take 5,760 years to reach the earth, and from some of these clusters, the distance is so great that light would take 500,000 years to pass to the earth; so that we see objects not as they really are, but as they were 500,000 years ago.

POISON IN PRESERVED PEAS.—The subject of the use of salts of copper as colouring matter for articles of food has been before the French Academy. In the course of the discussion, M. Pasteur stated that, having bought fourteen cases of preserved peas at random from several shops in the principal quarters of Paris, he found ten of them containing copper sometimes as much as 1-70,000th of the whole weight of the article, exclusive of the liquid—the latter always containing some copper, when the peas contain it, but in less quantity; in the peas, the copper is generally to be found mixed under the exterior cortical envelope. In the interests, therefore, of public sanitary safety, M. Pasteur urged the absolute proscription of such treatment of alimentary substances—toleration of the articles in question to be permitted only on condition that the seller label the packages, "Preserved peas coloured green with salts of copper."

COLOR BLINDNESS.—Dr. P. D. Heyser, of Philadelphia, has been making some interesting investigations concerning the capacity of the average railway employee to distinguish between the ordinary colours used for signaling on railways. Last summer he wrote to the managers of the different lines centering in Philadelphia, and proposed to begin a systematic examination of train-men, with a view to ascertaining to what extent colour-blindness prevailed among them. In October last he began operations, and has already examined the eyes of several hundred men. No official report has as yet been made, but it is understood that he has found

a number of men who are utterly incapable of distinguishing between the different colours. Dr. Heyser's investigations are really more practical than those of Dr. Jeffries of Boston, who is examining the eyes of children in the public schools, for the lives of many passengers may at any time depend upon a man's ability to distinguish red from green.

USE OF WHEAT IN ENGLAND AND SCOTLAND.—Very little wheat was used during the earlier periods of English history by the poor in England and none in Scotland. Rye bread and oatmeal in 1596 were the staple diet of the servants in great families. In the reign of Henry VIII. the gentry kept the wheat for their own tables; their households were usually obliged to content themselves with rye, barley, and oats. In a monopoly granted by Charles II. in 1626, barley bread is stated to be the usual food for the ordinary sort of people. In 1727 a field of eight acres sown with wheat in the vicinity of Edinburgh was reckoned so great a curiosity, that it excited the attention of the whole neighbourhood. In 1770, no loaf bread was to be met with in the villages and country places of Scotland, oat cake and barley bannocks being universally used; but about the commencement of the nineteenth century a change began. Every village began to have its public baker of wheaten bread. In England, private baking was the rule; and even up to 1814, there was not a single baker in Manchester. All the chief towns of Great Britain have now several bakers' shops, and baking in private houses has very much diminished.

WHOOPIING COUGH AND FUNGUS.—Some years ago M. Szeverich made the assertion that whooping-cough was caused by a certain fungus. This assertion seems lately to have been confirmed by the researches of M. Yschamer, who says he has found certain lower organisms in the sputum of whooping cough patients—organisms not met with in any other disease accompanied by cough and expectoration. Examining the sputum after it has been a short time suspended in water, there are found corpuscles about the size of a pin's head, of white or slightly yellowish hue, and these show, besides apathetical cells, a network frame of polygonal meshes, with rounded greenish sporules at a more advanced stage, colourless hyphae are seen, and large sporules, yellowish or brownish-red, sometimes even ramified. It is interesting to learn that the champignons in question are quite identical with those which, by their agglomeration, form the black points on the skins of oranges and the pairings of certain fruits, especially apples. Thus, M. Yschamer, by inoculating rabbits with this dark matter, or even causing it to be inhaled by man, produced fits of coughing several days in duration, and presenting all the characters of the convulsive whooping-cough.

THE HABITS OF BIRDS.—At a recent meeting of the Maryland Academy of Sciences, Mr. Otto Lagger read a paper on birds, based upon his own personal observations. Most birds, he said, take but two meals a day—early in the morning, and about dark; birds of prey rarely more than one a day. Three hours out of the twenty-four seem sufficient rest in sleep for singing-birds. They are sensibly affected by atmospheric conditions, singing less, and less jubilantly during cloudy, wet weather. Male birds usually mate with one female and remain faithful to her, guarding her while she builds the nest for the coming brood, and feeding her while she is incubating the eggs, or taking her place while she flies off in search of food. Birds have little discrimination as to what kinds of eggs are placed under them in the nest to incubate, and will try to hatch acorns or nuts if placed in the nest instead of eggs. A temperature of eighty-six degrees Fahrenheit for twenty-one days is required to hatch most birds' eggs. The young are not assisted by their parents to leave the egg, but when each one has broken its way out the parent carefully removes the pieces of broken egg from the nest. The young generally emerge from the larger end of the egg, and, before coming out, can be heard at work breaking their way. They are born hungry, open their mouths for food as soon as born, and are great eaters. Their eyes open in from five to ten days. When the young bird is old enough to forage for itself it is cruelly driven away by the parent birds. Many birds are much troubled by skin and feather parasites on their heads and wings.

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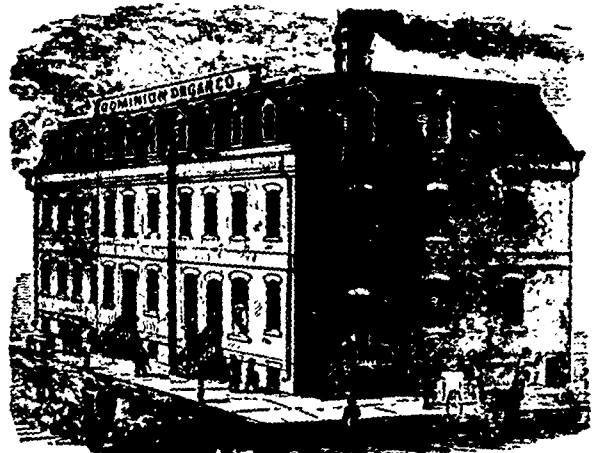
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COPY
Of Official Report of Award to DOMINION ORGAN COMPANY, Bowmanville, for Organs exhibited at the Centennial Exhibition, Philadelphia, 1876.

INTERNATIONAL EXHIBITION. (No. 235.)
PHILADELPHIA, 1876.

The United States Centennial Commission has examined the report of the Judge, and accepted the following reasons, and decreed an award in conformity therewith.

PHILADELPHIA, December 5th, 1876.
REPORT ON AWARDS.
Product, REED ORGANS. Name and address of Exhibitor, DOMINION ORGAN CO., Bowmanville, Canada.

The undersigned, having examined the product herein described, respectfully recommends the same to the United States Centennial Commission for Award, for the following reasons, viz:—

"Because they have produced in their instrument a pure and satisfying tone, by their method of voicing, and have a simple and efficient stop-action, with satisfying musical combinations, an elastic touch, and good general workmanship."

H. K. OLIVER, *Signature of the Judge.*
APPROVAL OF GROUP JUDGES.

J. SCHIEDMAYR, WILLIAM THOMSON, E. LEVASSEUR, JAMES C. WATSON, ED. FAVRE PERRET, JOSEPH HENRY, GEO. F. BRISTOW, J. E. HILGARD, P. F. KIRK, F. A. P. BARNARD
A true copy of the Record. FRANCIS A. WALKER, Chief of the Bureau of Awards
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