SCIENTIFIC MUSEUM.

Agricultural Science.

To Dissolve Bones.—Procure a stout earthen jar, of about thirty gallons capacity. Put 100 lbs. in the jar and moisten them with water for a day or two. Now dilute fifty pounds of vitriol with two or three times its bulk of water and pour one-third of it upon the bones. Stir them frequently, and on the morrow add another third of the acid and water. Stir them well, and if not dissolved sufficiently on the next day, add the remainder of the liquid. As soon as the bones are reduced, mix charcoal dust, dry peat, saw dust, loamy earth, or, if for immediate use, ashes or lime may be used as a dryer until the whole is in the form of powder, convenient for sowing by hand or drilling machine. You may apply this at the rate of three to ten bushels of the bones to the acre, sown broadcast and lightly plowed or harrowed in, so that the earth will absorb the gaseous portions of the gelatine of the bones, which is of great value, independent of the phosphate of lime; a substance greatly needed upon all the cultivated fields and pastures of all the old States of the Union.

Culture of Rhubarb.

Garden rhubarb is valuable as an early vegetable. For sauce and pastry, it is a good substitute for apples and other fruits, it being ready for use at a time when these fruits cannot easily be obtained. Its goodness, however, depends much on its being so cultivated as to secure a large and rapid growth. For this purpose, select a location to which the sun has a free access. Then from a space of sufficient length and width remove the earth to a depth of two and a half feet, and fill the trench with rich soil and manure. Let the latter be used plentifully, for rhubarb is a great consumer, and there is no danger of enriching it too much. The ground being thus prepared, the plants may be inserted, with their tops two or three inches below the surface.

Saving Manure.

The Michigan Farmer gives the practice of a Scotch farmer, in the saving and management of his manure, which we cannot but regard as eminently economical of its fertilizing qualities, and worthy of general adoption except in the depth of winter, when it may be delayed. To prevent dissipation by evaporation and washing, he draws it away as fast as it is thrown from the stable, piles it up in some convenient place on the farm, first placing a layer of the fresh manure, to a depth of 8 or 10 inches, then a layer of common soil about four inches thick, which presses the course down to about the same thickness, then another layer of manure, which in like manner is followed by another layer of earth, and so on till the pile is completed. In this way the volatile portions are preserved, and he asserts the manure is of double value to what it would have been lying in the yard.

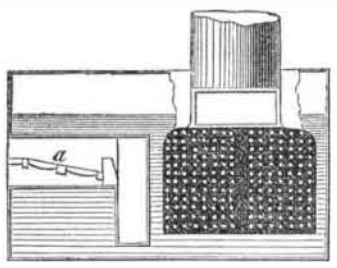
Currant Bushes.

Having noticed that currant bushes may as well be made trees as shrubs, I have concluded to tell you how I have seen it done. In the spring of 1831 my father commenced a garden, and among other things set cuttings; and as soon as they grew I picked off all the leaves except the top tuft, which I let grow. The cutting was about fourteen inches high, and during the summer the sprout from the top of this grew perhaps ten inches. The next spring I pinched off all the leaves to about half way up the first year's growth, so as to leave the lowest limbs about two feet from the ground. It branched well and became a nice little dwarf tree. When it came to bear fruit, it was more productive than any other bush in the garden, and the fruit larger, it was less infected with spiders, and other insects; hens could not pick off the fruit, and grass and weeds are more easily kept from about the roots—and it was an ornament instead of a blemish. Now I would propose that currant cuttings be set in rows about five feet apart each way; let them be long and straight ones, and trained into trees.—[Michigan Farmer.

On Boilers.---No. 25.

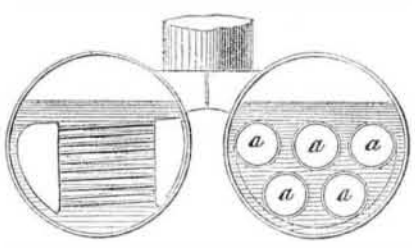
Marine Boilers —Figures 51 and 52 are a side elevation and a transverse section of a boiler by Messrs. Penn & Son, of London, for the Hydra, a naval steam vessel, and which were illustrated in the "London Artisan" o last April. The shell is 9 feet 10 inches in diameter, and 16 feet 8 inches long. The number of tubes are 398 of 2 3-8 inches diameter, and 5 feet 3 inches long; furnaces 2 feet 8 inches diameter. The furnaces, *a a*, as well as the shell, are cylindrical, and the small diameter of the furnaces enable them to resist a very high pressure. The furnaces being arranged in two tiers, allow of a large area of fire-grate being obtained in a narrow width of shell. The position of the tubes across the boiler makes them as accessible as in an ordinary boiler.

Fig. 51.



One great drawback to the economy of Marine Steam Boilers, is the use of salt water; this contains about one-thirty-third of its own weight of salt, consequently every ninety-nine gallons of water that is evaporated leaves three gallons of salt—ninety-six have expanded into steam, and three have been resolved into solid matter. If there were not some plan to relieve the boiler of this salt, it would soon choke up—be filled with salt. This really did take place with the first steamboat which made a sea voyage. It would be a great saving of fuel if fresh water could be used at sea, and many plans have been tried to employ it, by cooling the steam in a condenser, and using it over again as feed water in the boiler. Of course the condensation must be effected by the application of cold water on the outside, instead of in the inside of the condenser, which is the common plan. Hall's condenser had a very high reputation at one time, but all machines and apparatus for any purpose are valuable only according to their general economy, which can only be found out by use; we are not able to give the reason why Hall's Condenser is not now used.

Fig. 51



The plan in general use forrelieving marine boilers of salt, is "blowing off." This, to be economically performed, must be accomplished when the water in the boiler has been saturated to a certain density—not before nor after. This point of density is indicated by an instrument attached to the boiler and named a "Salinometer." The one invented by W. Sewall, Jr., and described on page 120, Vol. 6, Scientific American, is the one most highly recommended in our country. Charles W. Copeland, at one time Chief Engineer U. S. Navy, is the inventor of an excellent blow-off apparatus for boilers. It is constructed on the principle of making the supply of feed water regulate the amount of blow-off. His blow-off was applied to the boilers of the war steamship Mississippi, but whether it has been applied to any of our merchant steamships or not, we cannot tell. It is intended as a substitute for blowing-off by hand; the constant-blow, which is a small open tube to drain off the requisite saturated quantity; and it is also a substitute for brine pumps; the latter, however, have not been much used.

The Food of Man.

A number of experiments have recently been made in Glasgow Prison, Scotland, on various persons, to test the effects of different kinds of food on them. It was found that ten persons gained four pounds of flesh each in two months, eating for breakfast eight ounces of oatmeal made into a porridge, with a pint of buttermilk; for dinner, three pounds of boiled potatoes, with salt; for supper, five ounces of oatmeal porridge, with one-half pint of buttermilk, which cost twopence three farthings per day. Ten others gained three and a half pounds of flesh, eating six pounds of boiled potatoes daily, taking nothing with them but salt. Ten others eat the same amount of porridge and buttermilk, without the potatoes, as the first ten, but for dinner had soup; they lost one and a quarter pounds of flesh each; and twenty others, who had less potatoes, but a half pound of meat for dinner, diminished in size likewise From this, it would appear that potatoes were better diet than smaller quantities of animal food, at least for persons in confinement.

On the the Topical Use of Chloroform.

To obviate the volatile character of chloroform when employed topically, Dr. Rauch combines it with olive oil and some liquor ammoniæ, forming an emulsive liniment.—This is less expensive, relieves sooner, and is not so volatile as chloroform. The ingredients were first employed in equal parts; but were afterwards used in other proportions, according as to whether a counter-irritant effect (when more ammonia and chloroform must be added) were desired or not. It is applied on a woolen cloth, so folded that the inner layer is saturated with the liniment, and the other kept dry, so as to prevent evaporation. When first applied, it feels cool, then smarts and burns so for ten minutes as hardly to be borne; and an agreeable coolness, with relief of pain, succeeds. When it causes too much irritation or vesication, it should be removed, or applied to another locality. The skin is made red by it, and often vesicated; and if a mere rubefacient is required, it should be applied by friction, or the cloth should remain on only for a short time. When a speedy vesicant effect is required, it is more useful than a sinapism or blister, and is easier of application, especially in children, who often fall asleep during its application. Dr. Rauch found it of great use, combined with other means, in cholera; and in relieving the painful effections of the abdomen in childeren, it is preferable to any anodyne. In the case of superficial burns, a compound of equal parts of chloroform, olive oil, and lime water, has been found highly useful.—[Amer. Jour. Med. Sci.

The Chances of Life.

Among the interesting facts developed by the recent census, are some in relation to the laws that govern life and death. They are based upon returns from the State of Maryland, and a comparison with previous ones. The calculation it is unnecessary to explain, but the result is a table from which we gather the following illustrations:—

10,268 infants are born on the same day and enter upon life simultaneously. Of these, 1,243 never reach the anniversary of their birth. 9,025 commence the second year, but the proportion of deaths still continues so great, that at the end of the third only 8,183, or about four-fifths of the original number, survive. But during the fourth year, the system seems to acquire more strength, and the number of deaths rapidly decreases. It goes on decreasing until twenty-one, the commencement of maturity and the period of highest health. 7,134 enter upon the activities and responsibilities of life—more than two-thirds of the original number. Thirty-five come to the meridian of manhood; 6,302 have reached it. Twenty years more, and the ranks are thinned. Only 4,727, or less than half of those who entered life fifty-five years ago, are left. And now death comes more frequently. Every year the ratio of mortality steadily increases, and at seventy there are not a thousand survivors. A scattered few live on to the close of the century, and at the age of one hundred and six years the drama is ended. The last man is dead.

A New Comet.

On the nineteenth instant a telescope comet was discovered early in the morning, by P. Bond, at the Cambridge Observatory, Mass. This is the twelfth seen by him before intelligence of others seeing them had reached this country.

LITERARY NOTICES.

Paper Hanger's Companion—This is a very useful little book, by James Arrowsmith published by H. C. Baird, of Philadelphia, and for sale by J. S Taylor, 142 Nassau street, this city; it gives directions how to make the different kinds of pastes, and how to select and hang all the different kinds of paper; and it gives some very judicious counsel to decorators of houses. This little volume is one of the "Practical Series," full of tried and practical knowledge.

Machinery of the Nineteenth Century—Part III. of this noble work, by G. D. Dempsey, C. E., of London, has arrived, and is now for sale by H. Bailliere, of 290 Broadway; it contains drawings of Barrett, Exall & Andrews' Four Horse-power Portable Steam Engine, also their Hay Machine; Simpson & Shipton's Patent Reciprocating Marine Engines; Hick & Son's Drilling Machine, and Lloyd's Centrifugal Machinery for blowing, &c. This is one of the most useful works in the world: the author of it is an eminent enginer, and with a rare opportunity of examining the machinery of "All nations in the Crystal Palace," he is now giving to the world his knowledge of modern improved machinery of all kinds. The Drawings are large and to scale, suitable for working. The price of each part is $1,50.

French Literary Review—This is the title of a well printed weekly, edited and published by Messrs. Richard & Mouton; it is designed to impart a knowledge of the French language in a pleasant and easy manner, during hours of recreation, particularly to those who may have no opportunity of availing themselves of the aid of a teacher; it contains tables compiled with great care and labor, showing both the pronunciation and grammatical construction of the language. Besides the tables and exercises, each number contains some biographical sketch of some eminent French writer, with choice selections from their writings, accompanied by an English translation. The Editors have long been successful teachers in this city, and they endeavor, in this work, to impart such information, in an attractive manner, as will meet the varied difficulties of learners, which their long experience has taught them was required. It is in quarto form, 16 pp.; price $5 a-year; to be had at at the office of publication, 115 Chambers street, New York.

Boston Museum—This favorite literary weekly, we notice, has changed proprietors, Chas. A. V. Putnam retiring and Ossian E. Dodge, assuming the responsibilities of proprietorship. Mr. Dodge is well known throughout the Eastern States as a popular vocalist and delineator of humorous characters, besides, his letters, published in the Museum during the last year, over the nom-de-plume of "Quails," have made him favorably conspicuous. While we regret the loss of friend Putnam from the literary arena, we welcome Mr. Dodge in his new sphere with a shake of the right ☞. By the way, the "Museum" commences a new volume in about two week's, thus presenting a favorable opportunity for new subscribers. Terms $2 per annum. Address Ossian E. Dodge, Boston, Mass.

Health Almanac—We have had the Religious, Temperance, Farmers', Whig, Phrenological, Comic, and other Almanacs in infinite variety of form and almost every title that could be thought of heretofore, but here comes a new one, with a new title, seeking patronage. Health Almanac, what a title! still, its name implies its character, for it tells where the Graefenburg Company's medicines may be found, and they purport to cure nearly all maladies with which mankind is afflicted. The Almanac is tastefully illustrated, and contains many valuable receipts worth preserving by every housewife. Copies, with a loop attached for hanging them up (how convenient), may be had gratis (how cheap!) by personal application to the Graefenburg Co., office 214 Broadway.

Sartain's Magazine—We are indebted to Dewitt & Davenport for the monthly visits of this popular magazine, also for Graham's and Peterson's, the June numbers of which have been received.