HOW MANY EGGS CAN A HEN LAY?

There has been so much loose talk about the total number of eggs a hen is capable of laying, and her yearly yield under fairly good treatment, that it is a satisfaction to come across something beyond guess-work or mere inference on the matter. The foundation of science is accurate observation, and when a scientist publishes a statement, it is presumable that it is based on this foundation. Its accuracy, too, is confirmed, if it is quoted with approval by other men of wide experience and knowledge on the subject involved in it. Now, Geyelin says, and Prof. Miles, in his excellent work on stock breeding, quotes him with approval: "It has been ascertained that the ovarium of a fowl is composed of 600 ovules or eggs; therefore a hen, during the whole of her life, cannot possibly lay more eggs than 600, which, in a natural course, are distributed over nine years in the following proportion:

1st year after birth	15 to 20
2d " " "	100 " 120
3d " " "	120 " 135
4th " " "	100 " 115
5th " " "	60 " 80
6th " " "	50 " 60
7th " " "	35 " 40
8th " " "	15 " 20
9th " " "	1 " 10

Inasmuch as experience demonstrates that some breeds of hens are vastly more prolific than others, this statement, of course, can be applicable only to the average of poultry.—*Rural New Yorker.*

Old and New Objects of Invention.—The inventions of the last hundred years sometimes appear more grand and far reaching than any now being developed or demanded. But it must be remembered that the old inventors had a clear field. Everything was demanded and nothing was done. The steam engine, the cotton gin, the telegraph, smelting with pit coal, the hot blast, the rifled cannon, and all the other great inventions which have changed the whole aspect of life, were then unknown, and even the most imperfect development of them was more striking and revolutionary than the later and really more valuable refinements of the same inventions. And it does not follow that less useful work is wanted or likely to be done now. On the contrary, the improvements in steam power, for instance, likely to be developed during the next hundred years, will have a greater money value than all that has preceded—perfect as the steam engine is to-day. The old inventors were called upon to discover and open the doors of Nature's storehouse; the later inventors are called upon to bring out and set in order her wonderful secrets.

Shipbuilding in the United States.—The following statistics show that the shipbuilding industry is not quite extinct in this country: During the fiscal year ending June 30th, 1878, 32 iron vessels were built, with a tonnage of 25,960.29 tons. This record is second to the best record the country has yet made, which was in 1874, when the tonnage aggregated 33,097 tons. The next best record in tonnage was in 1873, when it amounted to 26,548 tons. The number of iron vessels built during the past year was greater than in any other year, the year which most favorably compares with it being 1873, when 26 were built. Of the vessels built during the past year, 9 were ocean propellers, varying in tonnage from 1,156 tons to 3,548 tons; 1 was a lake propeller of 306 tons; 1 was a stern-wheel river steamer of 1,028 tons; 7 were side-wheel river steamers, ranging from 128 to 1,285 tons; 13 were steam tugs, the largest of which measured 180 tons; and the remaining vessel was a yatch. The current year promises to surpass the last considerably in its additions to our iron shipping.

The government of Mexico has definitely decided to hold an International exhibition in 1880.

ELEVATION AND TEMPERATURE.

Dr. C. D. Hunter, of Santa Rosa, has given much attention to the study of atmospheric and climatic phenomena in different parts of the world. He writes for a recent issue of the Santa Rosa *Demoerat* an article to show the philosophy of escapes from frosts at moderate elevations, while valleys below are badly bitten. Although all of us know practically that such is the fact, not all are conversant with the reasons therefor, and as the subject is of interest to many who are intending fruit-growing and the like, we shall present in condensed form the atmospheric performances outlined by Dr. Hunter.

It seems that the first clear demonstration that the valleys were more subject to frost than the hillsides, resulted from the establishment of meteorological stations in Switzerland. There the great hight of the mountains and the narrowness of the valleys show their difference much more markedly, and to as great a hight as 5,000 feet. Santa Rosa valley is so large and wide in comparison to the hight of its surrounding hills, that the difference is neither so marked, nor can it extend to so great a hight. Probably in our smaller valleys, and the great Sacramento valley near the foot of the higher Sierras, will be found many low-lying grounds subject to night frosts even late in the spring season.

The main cause of this peculiarity in the distribution of low temperatures is to be found in the but slight heating effect of the sun's rays on the atmosphere. The sun must first heat the soil, and then the soil heats the air. Conversely the cooling of the air is also effected by the soil; and hence the air nearest the soil is always the hottest when the sun is shining, and the coldest when the sun is absent. For the same reason the surface air experiences the greatest changes of temperature. So it comes that the air of the valleys being hedged in by a surface of soil on every side gets rapidly heated when the sun shines, whereas that of the hills has not only less surface for an equal quantity of air, but it is almost constantly in motion, and each new supply keeps down the temperature of the surface soil and air. The glaciers of the Sierras and the snow-capped peaks of high mountains even in the tropics, bear witness to the fact that the direct rays of the sun have but little power to heat the atmosphere; for otherwise the higher we ascended the warmer it should be.

Few have any idea of the extreme changes of heat experienced by the surface soil. When the maximum thermometer in the air will register 70° or 80°, one on the soil may reach 110° to 130°. But even before the sun sets and as its rays cease to heat the soil, the surface rapidly cools down, and after a calm, clear night it will be found, as a rule, from 4° to 8° colder at sunrise than the air four feet above it. Now, as every one knows, cold air is heavier than hot air, hence what forms in the valley remains there. But what of that on the hill? As the air on the hill cools, it begins, like water, to seek its lowest level, and as the cooling process goes on, every watercourse, ditch and hollow becomes a channel down which the cold air flows just as if it was so much water. Consequently near the foot of the hill every little valley and depression of the surface becomes a little lake of the frosty fluid. Here it accumulates in proportion to the stillness of the night and severity of the frost. At the same time the hill surface as it loses its cold air must get a new supply, and this, of course, can only come from above, where the air of the day, being out of the reach of any solid body to cool it, has lost only a portion of its heat. So by night the soil of the hills is constantly bathed with air of a comparatively mild temperature, whilst the valleys receive of cold far more than their share.

FACTS OF VALUE TO THE HOUSEWIFE.

That salt will curdle new milk; hence, in preparing milk-porridge, gravies, etc., the salt should not be added until the dish is prepared.

That fresh meat, after beginning to sour, will sweeten if placed out of doors in the cool air overnight.

That clear, boiling water will remove tea stains and many fruit stains. Pour the water through the stain, and thus prevent it from spreading over the fabric.

That ripe tomatoes will remove ink and other stains from white cloth, also from the hands.

That a tablespoonful of turpentine boiled with your white clothes will greatly aid the whitening process.

That boiled starch is much improved by the addition of a little sperm, or a little salt, or both, or a little gum arabic dissolved.

That beeswax and salt will make your rusty flat-irons as clean and smooth as glass. Tie a lump of wax in a rag, and keep it for the purpose. When the irons are hot, rub them first with the wax rag, then scour with a paper or cloth sprinkled with salt.

That blue ointment and kerosene mixed in equal proportions and applied to bedsteads is an unfailing bedbug remedy, and that a coat of whitewash is ditto for the walls of a log-house.

That kerosene oil will soften boots or shoes which have been hardened by water, and render them as pliable as new.

That kerosene will make your tin kettle as bright as new. Saturate a woolen rag and rub with it. It will also remove stains from, and clean, varnished furniture.

That cold rain-water and soap will remove machine grease from washable fabrics.

Coating Metals With Tin.—The process of coating metals with tin promises to extend its use for culinary and other uses. Its electro-deposition is proposed by means of a zinc and carbon battery. The inner cell containing the zinc is filled with dilute sulphuric acid. The articles to be coated with tin are put into a bath composed of 8 parts of protochloride of tin, 16 of cream of tartar, and 2 of the chloride if the latter is used. When it is present the tin coating is effected more rapidly, whereas, when the bath is composed of protochloride of tin and cream of tartar only, the tin coating is very white, but is not produced so rapidly as when the chloride is used. These ingredients should be dissolved in about 100 gallons of distilled water. The black plates are first "pickled" in any suitable manner, and then immersed in the above described bath or solution, and are allowed to remain in the same for a longer or shorter time, according to the thickness of the deposit or coating of tin required on the plates. While in this bath the plates or other pieces to be coated are connected by a wire with the positive end of the battery, while the negative end of the battery is connected with a piece of tin hung in the same bath. When the plates or other pieces or articles have been sufficiently coated with tin, they are held over a fire in order to give the tin a lustrous appearance.

Compressing Bran.—We recently referred to some successful experiments in compressing flour. We now learn that some Minneapolis millers are experimenting with machinery for compressing bran, for the purpose of shipment to Europe. It is believed that it can be so compressed as to get as much weight into a given package as the same would hold of flour.

Phosphide of calcium on becoming wet will give off spontaneously combustible phosphoreted hydrogen, thus emitting light. This is the principal ingredient used in the distress and guiding signals thrown into the water from a sinking ship, principally to guide those in the water to the boats.