

SCIENTIFIC MISCELLANEE

To Make Glass Houses Cool, An Ancient Chinese Mine, The Marvel of Our Light, A Unique Material, Weathering of Building Stone, Inefficiency of the Jet Drive, Twentieth Century Astronomy, The Earth Made-Up.

It is found to be possible to gain light and cheerfulness by glass walls and sides in factory buildings without adding to the heat from high temperature in summer weather. Efficient natural ventilation is the secret, and the Chemical Trade Journal supports the claim by the results of recent tests at a new engineering plant, in which the roofs and sides probably have a greater glass area per unit of floor area than any other factory building in the world.

The mercury mine of Dong-shun-han, Kweichow, China, is reported by The Engineer (London), as having been in operation since the Wing dynasty (1368-1644), and being still worked in a crude way. The ore is a dark red and transparent, and another kind dark red and opaque, is found in veins and in limestone strata, and in isolated patches or pockets. Holes drilled to a certain depth 2 or 3 pounds of gunpowder is inserted, and the explosion separates 200 or 300 pounds of mercury ore. The broken up rock is placed in the native smelting furnace, which includes three boilers and has an earthenware basin in which the mercury vapor is condensed.

Tungsten filaments are coils of almost invisible wire, only a few thousandths of an inch thick, which are wound on a core of steel or iron one-fourth of an inch diameter. As the core is fed into a special machine the tungsten wire is stretched, heated to a cherry red by an electric current, and wound on the core at the rate of 4,000 turns a minute. After the winding, the core is dissolved with acid. Even the finished filament appears quite hairlike in actual size, but the incandescent lamp it withstands the electric current for many hundred hours.

Rubber is a peculiar substance, nothing else being like it, and it serves purposes that no other material will serve. It is one of the important materials that in time must meet a demand greater than can be supplied. The total volume of sales in the American rubber industry in 1922 was \$49,000,000, in 1923 it had increased to \$60,000,000, and assuming this to represent 70 per cent of the world's total, the aggregate of rubber sales in 1922 must have been about \$1,300,000,000. Addressing the Institution of the Rubber Industry Dr. W. C. Geer estimated that by 1928 the world's requirement of crude rubber would be between 450,000 and 550,000 tons. At present the material is employed for 30,000 articles, and the requirement in the automobile industry alone amounts to 300,000 tons yearly. The world's motor cars and trucks on Jan. 1, 1923, numbered 14,607,000, those of the United States, with 6 per cent of the world's population, being 34 per cent of the total. Computing 5 tires to each car, the number of tires in actual use is about 72 million, and the yearly replacement to keep up the supply may be conservatively taken at 48 millions. The finding of a material to serve in place of rubber is still a problem of the future. Synthetic rubber, which Germany has had ample opportunity to develop, is pronounced by Dr. Geer a dismal failure, and substitutes even reclaimer rubber have been scarcely more successful.

In the weathering tests now being carried out by the U. S. Bureau of Standards, some limestones have endured 800 freezings with scarcely any perceptible effect, while inferior grades have been completely disintegrated by 100 freezings. Sandstones appear to have good resistance, but further tests are to be made. Some specimens of sandstones have been tested by repeatedly soaking in 15 per cent of common salt. On drying, the salt crystallizes in the pores of the stone, and the result is a rapid disintegration of limestones that have proven very resistant to freezing.

The jet system of propulsion in air, as reported by E. Buckingham to the American National Advisory Committee for Aeronautics, is much less efficient than the ordinary propeller. The fuel consumption and weight of machinery decreases relatively as flying speed increases, but at 250 miles an hour the jet would still take about four times as much fuel per thrust horsepower as the air-screw, or propeller, and the power plant would be more complicated and heavier.

The twentieth century is the "golden age of astronomy," and though yet young, it has revealed wonder after wonder, not least of which is evidence that the universe of stars is more than one hundred thousand times as vast as was formerly supposed! Dr. Hector Macpherson notes in Popular Astronomy that great progress had been made in instrumental development, in the selection of favorable observatory sites, in the specialization of the work of observers, and in the interpretation of the different classes of phenomena. Of the measurement of star distances, Newcomb reported in 1901 that only 18 were reasonably reliable. Chiefly through the work of American astronomers, the parallaxes of about 1400 stars are now known.

by the trigonometrical method alone, and by the beautiful new spectroscopic method 2000 stellar parallaxes have been determined in five years with the 100-inch reflector at Mount Wilson. Within the last decade, Dr. Russell and his pupil, Dr. Harlow Shapley now director of Harvard College Observatory, have determined the absolute magnitudes and therefore distances of nearly 200 eclipsing variables and over 200 variables of the Cepheid class. Among many wonderful advances, Dr. Shapley's are best calculated to strike the average imagination. In 1914 he began at Mount Wilson his studies on colors and magnitudes in stellar clusters, and by 1919, as the result of several methods of measurement, he had determined the distances of 96 of the globular clusters, or "cosmic units" outside the Milky Way, which turned out to be not independent stellar universes but certainly dependent sub-systems. The nearest, Omega Centauri, is 20,000 light-years away, the farthest, N. G. C. 7,006, is 220,000 light-years. Dr. Shapley has shown that the stellar universe is not a system, but a system of systems, or a cluster of clusters, and indicated that the center of gravity is in the constellation Sagittarius, 60,000 light-years from the sun. In shape the stellar universe is a flattened disc, about 4,000 light-years in thickness and 300,000 in diameter, while grouped around it are the dependent sub-systems, the globular clusters, or "island universes." Physical and chemical evidence is found by V. M. Goldschmidt for the conclusion that, under the influence of gravitation, the earth has become stratified in four broad zones. The center is probably a core of heavy metals, chiefly nickel-iron, such as we find in meteorites. Next is a shell of metallic oxides and sulphides, then a shell of dense silicates, called eclogite shell, and outside all others is a thin shell of the lighter silicates.

The Ocean's Bed (By Dominion News Service)

LONDON, Sept. 14.—Memories of Jules Verne's enthralling romances of submarine adventure are recalled by a reported discovery by an Eastern Telegraph Company's repair ship on the St. Helena-Cape town route. Early this month a break was reported in the cable at a spot some 800 miles north of the Cape, and investigation by the repair-ship has shown that, probably due to some vast submarine convulsion, the ocean bed at this point has risen from a depth of three miles to within three-quarters of a mile of the surface. An underwater Alp over two miles in height has thus been thrown up. Such amazing gestures of nature are common, though they are not always brought to notice.

There is the well-known theory that the Atoll islands of the Pacific are the result of volcanic upheaval, mountain peaks jutting above the surface of the waters, appearing and disappearing sometimes in a night. You have to picture the great submarine continent as more or less like the earth's surface as we know it. There are mountain chains linked between great plains, soaring peaks and bottomless abysses. The average depth of the ocean is given as two and a half miles, but more than half the entire floor is covered by depths of between 2000 and 3000 fathoms. In the Pacific lie two astounding gulfs, the "Challenger Deep," which is 2569 fathoms, and the Swire Deep, 5348 fathoms. Mount Everest, the highest mountain in the world, if placed in this area, would, it is computed, be still 3057 feet below the surface.

From the bottom of the Swire Deep to the top of Mount Everest, according to Professor Murray, could be drawn a vertical line of 61,091 feet, or even 11 1/2 miles. "There is continuous stress and strain in the bed of the ocean," a geological expert stated today, "and sometimes there occurs a rupture along the lines of weakness which may cause an uprush of volcanic matter." Like the earth's crust, the ocean bed is parcelled out into great earth blocks, subjected to constant strain by a variety of causes, earth shrinkage being the principal. The continental earth blocks tend to rise, the abyssal earth blocks to subside, and fissures, or great sea-quakes, result.

Nature, with a mighty heave, throws up a mountain which may in time figure on the charts as a new island. There is not much danger to shipping, except in cases where volcanic reefs may lie hid just beneath the ocean surface. Volcanic action of this nature is generally confined to mid-ocean, where the pressure is greatest. It is in mid-ocean that the gulfs and abysses exist. Around the coasts, where the land slopes down to the ocean bed, you find gradients covered with a blanket of alluvial deposit from the constant wash of the waters against the land, and outflow of the rivers; farther out into the central ocean you come to a part of the earth's crust which has probably lain under water for many millions of years. And beneath it all, ocean as well as earth, are the great volcanic seas of molten lava, whose bursting forth give rise to such phenomena as that reported to-day.

Child Welfare

Articles on Child Welfare, Published by the Canadian Red Cross Society, Will Appear Weekly in This Column, Furnished by the Local Red Cross Branch.

MINIMUM SANITARY REQUIREMENTS IN SCHOOLS

Accessibility. Drainage of yards, etc. Sunlight. Main window face East or West. Shades. Colors of Ceiling, white or light cream; Walls light gray or green Blackboards—not glossy or lined.

SCHOOL HOUSES

Doors open outward. Main door should have covered entrance. As near fire proof as possible. Separate cloak rooms. Basement well ventilated and dry. Class room for maximum of 30 pupils, 30x20 '10'.

VENTILATION AND HEATING

A. Open windows. B. Bored ventilators. C. If stove be jacketed—should have direct fresh air inlet about 12" square opening through the wall into the jacket against the hottest part of the stove. Exit for foul air opening at least 16" square on wall near floor on same side of room as stove. Temperature 66 degrees to 68 degrees.

LIGHTING AND DESKS

Abundance. Are a glass should be 1-5 to 1/4 of floor area. Light over left side along wall. If in rear, also should be 7 ft. above floor. Cleaning as well done as in house of good house-keeper. Privy. Rain proof, well ventilated and one of following: 1. Dry earth closet. 2. Septic tank container. 3. Water tight vault or box. All containers should be water tight, thoroughly screened against insects and easily cleaned at frequent intervals. Excreta, burned buried, or sub-soil drainage. The Health Care of the Rural School children should include at least the following: A. School Houses, sanitary and attractive. Well ventilated, lighted, cleaned and equipped within and without. B. Teachers trained to do their logical and full share in carrying out a health program.

HOW THE TEACHER CAN AID

- 1. By making health a personal asset. 2. By radiating health by example and enthusiasm and so making health contagious; being an example in personal hygiene, personal cleanliness, clothing, etc. 3. By believing in the practice and teaching daily health habits such as plenty of sleep, fresh air, mouth hygiene, food, rest, play, posture and breathing. 4. By seeing that classrooms are well ventilated and well lighted and kept in as healthful condition as possible during school hours. 5. By making the physical exercise drills between periods snappy and worth something. 6. By being keenly interested in all school health activities. Stimulating a greater endeavor to keep well. Teachers pupils parents, school doctor and nurse working together to make this possible. 7. By going over health records on which physical defects are noted at definite periods, and making a personal effort to bring about the correction, by talking to the child and sending a note to the parent. 8. By knowing, if possible, the parable, the parent of every child and endeavor to work in the closest cooperation. 9. By working in closest cooperation with all health activities in school and out.

WHEN FUR COATS WEAR AT EDGES.

That the fur coat wears so rapidly at the edges, especially the front edges, it is a draw back, but a Parisian furrier has a plan to overcome this difficulty. He lines these coats with suede or duvetyn and lets the lining pass the edges in a flat hand. The coat is warmer thus, the edges are saved from wear and appearance is smart. Also, stuffed linings, like a large piping, are sometimes set at the edge of mink coats.

"Gold" Chase Has Reached End of The Rainbow

MONTREAL, Sept. 13.—Following a meeting of directors, the Labrador Gold Fields, Limited, with offices in this city, was put into liquidation today by order of Mr. Justice Greene, in the Superior Court, acting on a petition presented by the company itself asking that its affairs be wound up through lack of assets. Alexander Burnett was named provisional liquidator and a meeting of creditors and shareholders will be held later.

HE EXPLAINS.

"What did you call your silver mine?" "The American Boy." "Any particular reason for calling it by name?" "Well it had plenty of pockets but nothing in them except rubbish."



THE HARVEST BRINGS HIM HOME. A repatriated Canadian soldier who arrived recently by the S.S. Montclair with his two little daughters, born in England. He has not been back to Canada since he sailed for service in the war with the Originals in 1914. He has taken advantage of the harvest rates to come home.

THE ANGLICAN CATHOLIC CONGRESS IN LONDON

July 10th to July 12th, 1923

The Congress opened with the Eucharist at St. Paul's Cathedral. From 10 a.m. an incessant stream of people poured up the steps of the Great Cathedral, not only the laity but the Clergy and religious orders in almost every known form of clerical dress; by 11.15 the Cathedral was filled even the lower galleries were crowded. Under the dome and in the eastern part of the choir sat the robed clergy, one thousand or more; each wore cassock and surplice and there a biretta was seen. The sisters in black habits made a contrast to the white robes of the clergy.

The high Altar was vested in red and the two lights on the altar and those in the standard candlesticks were lighted as is the custom of St. Paul's. At 11.20 a procession of ten or twelve Bishops with their Chaplains came slowly up the Cathedral and at the end the Metropolitan Eulogie Chief Bishop of all Russians in West Europe. At 11.30 the Cathedral Staff entered preceded by Verger and Cross bearers. First the Choir, then the Prelates, then the Bishops of Kensington, Stepney, and Willesden in Capes and Mitres attended by Canons Newbolt, Alexander and the Archdeacon of London also in Capes.

As soon as they reached their places, the Sacred Ministers entered: Minor Canon McChorne, Cella-brant, with Minor Canon Streeton and Couchman, Epistoler and Gos-peller. They were vested in Albes and Amices, Stoles and white Copes. As the sunlight lit up the gold of the mosaics, and the surplices and habits of the clergy, with many richly vested Bishops and Priests, the sanctuary presented a scene of great beauty. The music of the service was perfect, and the sermon preached by Rev. Arthur Montford of the Church of the Ascension was short striking direct and spiritual.

The service was not only most exquisite as far as music, ritual and ceremonial went but it expressed in the words of the English Prayer Book, the highest aspirations of praise, thanksgiving and worship. Many were present who remember the fightings and fears, the prayers and patience of fifty years ago and this service in its beauty must have comforted the fulfillment of dreams and an answer to many prayers. St. Paul's was the first Cathedral to show forth in practice the splendour of the Church's worship and the Church's faith after years of neglect and it was fitting that in the Capital Church of the Empire the Anglican Catholics should be found no more strangers and foreigners, but fellow citizens with the Saints and of the household of God.

At the opening session the Albert Hall was crowded from floor to gallery. A large crucifix occupied a central position on the platform and the following scroll could be read by all eyes:—"Blessed and praised for evermore be Jesus Christ on His Throne of Glory and in the Most Holy Sacrament of the Altar." The Bishop of London in purple Cassock and pectoral cross presided; by his side was the Bishop of Zanzibar. On the platform were the Bishops of Willesden, Guildford, St.



HOLDING HANDS AFFECTIONATELY AS LONG AS POSSIBLE. France and Britain are also divided in their sympathies in the Greek and Italian crisis.—From the Manchester Chronicle.

School and Home

SCHOOL AND HOME

Lettering on Flour Sacks

Many articles for household use such as towels and pillow-cases and for wear, especially children's garments, are made from the fine strong material of which flour bags are made, and so on, are constructed. They are used in their natural color or are dyed, while trimming and embroidery may add to their appearance, according to the taste and wishes of the worker. To remove the lettering from these bags is the first step in converting them to new uses, and this is sometimes troublesome. A simple method is given us by a reader, "Fraser M. B. C."—Shake the flour bag well wash it well in clear cold water, using cold water to make the latter, then place in cold water with a weight on the bag to keep it down. Let it remain for a day or two, when lettering will be almost gone. If not, repeat the treatment. Then roll it up, with the soap in it, and after that wash and boil. It will soon be very white, "Fraser M. B. C." says, but no hot water must be used on the bag until the lettering has disappeared, as that would set the coloring after in the lettering.—Housewife.

CLEANING GILT FRAMES

Marks caused by flies on gilt frames can be removed by the application of lemon juice. The juice should be squeezed into a saucer and applied by the means of a small sponge. The frame should be gently dried with a chamois leather. The white of an applied with a soft brush is good too.

CHINA CEMENTS

When your china gets broken, mend it in the following manner: Dissolve half an ounce of gum arabic in a wineglassful of boiling water and stir in enough plaster of Paris to make a stiff paste. Apply this solution with a brush to the broken edges. Which should be quiet clean. Fill them together and let them dry.

Another remedy for China is made by slaking a cupful of freshly burned lime with a very little boiling water, so that it falls into fine powder. Beat the yolk of one egg with a (teaspoonful of cold water) and the powerful lime until a thin paste is formed, and apply at once as it sets very quickly. Use a brush as with plaster Paris cement. Either of these cements will set firmly and withstand even boiling water.

CELERY FOR SEASONING

When using celery take the leaves from the stalks and thoroughly dry. Put into a glass fruit jar or any other container that will keep leaves dry. These are fine to season soups or dressings.

KITCHEN DOOR MAT

Old pieces of rope, may be utilized to make a very durable door mat to place in front of the kitchen door. Sew around and around in oval shape, exactly as braided rugs are sewn. Use strong thread. (It be washed and used indefinitely.

MAKE A LIST.

When you pack away winter clothes or other articles, make a list and tack it outside the container; it will save you much time and temper.

the oppressed and sweated, in those who have lost hope and those who are struggling to make good. "Look for Jesus in them and when you find Him, gird yourselves with His towel of fellowship and wash His feet in the person of His brethren." The closing service was held at St. Martin's in the Fields. At 7.30 the great procession started headed by a very large crucifix of gold and silver. By it were walking four abreast, nearly a thousand priests, vested in cassock and surplice with birettas on their heads. After them, preceded by another crucifix came the abbot of Pershore and an array of Bishops in cope and mitre the like of which was never before seen in Trafalgar Square.

Many persons knelt in the roadway as the Bishops passed. Outside the Church the Bishop of Nassau held overflow service for several thousands. The closing sermon was preached by the Bishop of St. Alban's and a solemn Te Deum was sung before the Altar. A wonderful spectacle was presented as the procession rose to the roof and faintly veiled the altar gleaming in golden tissue and decked with fine lace. The slight figure of the Bishop of London clothed in his white Alb covered by a heavy Cope, the glittering crown of the Russian Bishop and the pure gold of the robes of his attendant priests, the fifteen Bishops in cope and mitre of red and white and gold, with the thirty attendants wearing uncles made a magnificent sight.

When the last word of the Te Deum died away, the Bishop of London gave his blessing and the procession formed again. The Bishops emerged from the church at the head of the procession to find many hundreds of people on their knees as the Bishop of London with passed hand raised in Blessing. So ended the Anglo-Catholic Congress. Years of Prayer had preceded it, years of deeper and more apostolic prayer must follow it. May the next Congress meet us with another chapter of our history well written another story of our edifice solidly and truly built. From the Parish Magazine.

OF INTEREST TO FARMERS

A FARMER'S ACCOUNT BOOK.

(Experimental Farms Note.) Any merchant handling several different lines of goods would regard it as folly to neglect to keep a complete set of books enabling him at all times to ascertain his profits and losses on the various commodities he sells, his assets and liabilities, and so on. A merchant who failed to do so would be heading for insolvency. It is curious, then, that Canada's basic industry—agriculture—should be carried on, so far as individual producers are concerned with it in so casual a manner with regard to account-keeping. Especially is this strange when it is considered how simple farm book-keeping is by comparison with that of other businesses.

In a survey of some eight hundred farms conducted some time ago it was discovered that very few farmers indeed followed any thing like a complete method of accounting, while a large number adopted absolutely none at all. These, beyond having a sort of general idea as to "what paid," were often quite hazy as to actual returns from different lines of work.

In order, if possible, to remedy this undesirable state of affairs the Dominion Experimental Farms system has published an extremely simple farmer's account book, which will adequately serve all the needs of the farmer. In size and thickness it is no larger than a school exercise book, and is designed to last a complete year. To "keep" it needs no knowledge of ordinary accounting; simply the ability to write and add; and a record of all transactions might be made in an hour a week. A few plain directions as to making entries, some aids to taking inventories, a table of silo capacities and a gestation table, are given on the inside of the cover, while on the back are printed calendars for last, this and next year. In the book itself are pages for the entry of receipts and expenditures (both of which may be seen at a glance on the same page relative to cattle, horses, sheep, swine, poultry, crops and labor; and there is also ample space for miscellaneous items. There is a page for amounts owed to and by the farm, and forms on which may be made inventories of land and buildings, of live stock, of feed and supplies, and of machinery. Following is a page on which may be filled out a summary of the year's business, together with the few directions necessary to filling it out intelligently at the end of the year. Further, for the farmer's information there is a table in which to enter acreage and yield of crops, and one in which to keep a live stock service record.

The whole thing has been reduced to the simplest possible terms, and is particularly to the general farmer, one of the most useful publications issued from the Experimental Farms for some time. It should be recognized that farming is a business, the same as any other. If a business is not paying, the owner of it wants to know just why it is not doing so. This little book will enable the farmer to keep an accurate record of each department of his business, and out how much he is making from each, or how little, and so be able to adjust matters accordingly.

The "Farmer's Account Book" is obtainable from the Publications Branch of the Department of Agriculture, Ottawa, at a nominal charge of ten cents. No postage need be placed on letters of application. (Experimental Farms Note.) There is no apparent reason why every person who has a garden should not save seed of these two crops for planting the following year. The seed is easily harvested, can be safely stored in a dry place, and is usually of better quality than that bought. If a variety does not particularly well it should be retained for the next year. A great saving could be effected also, as a very small area will produce seed that would cost a dollar or two if bought. Further, it is saved, more is usually available for planting than would likely be bought, and in this way much more of these desirable vegetables will be grown.

SAVING SEED OF GARDEN PEAS AND BEANS.

When the peas have nicely matured, the vines are pulled without shaking the pods, and piled into small piles to dry. This takes from four days to a week, according to the weather. Should weather ensue and the piles be so compact, they should be turned over to prevent the seed from remaining damp and spoiling. A lot is available for seed purposes to take the vines inside and spread them thinly, when they will soon dry out. When the vines are nicely dried out in the field it has been found that to put them into bran bags and hang them up in a lot away from mice until they are threshed is a good plan. After they are threshed they can be placed away from mice and sorted over when time permits. If not for sale no sorting is necessary. Beans, when nicely matured and after the leaves have been removed by frost, are pulled and allowed to dry for a day or two, when they may be handled in the same way as peas. It bears rust is present it is wise to select pods free from the disease before threshing, keeping this separate from the rest. Those showing the disease after being threshed should be sorted over carefully and any showing signs of blackened skin should be discarded. This is an

GARDENING

For convenience the garden should be located as near the house as possible; situate toward the south or south east. Because with this exposure the soil will warm up early in the spring and earlier plants may be grown. The land should have sufficient fall to drain off the surplus water during heavy rains but the fall should not be so great as to allow the washing of the soil. After the proper selection of the garden site the essentials of a good garden are. Suitable soil, proper seed or plants, water or moisture, sunshine and warmth, right cultivation and care, and control of disease and insects. Any girl who doesn't try to conceal her age is too young to go into society. The amateur photographer is responsible for a great many of life's misrepresentations. "Haven't you any superlatives?" "No, think my bring had luck."—New York Sun and Globe. Columbus must have turned over in his grave when he heard his name connected with the buying

disease, which is carried over in the seed. It does not require much time to save the seed necessary for a good garden, and those who make a practice of saving their own seed are always pleased that they have done so. If it is desired to get into newer and better varieties and only a limited number of plants are being grown, a year or two of careful saving and selection of best-free seed of these varieties will build up a satisfactory stock. The harvesting of garden peas and beans is not different from the method of harvesting similar field varieties of these crops. W. S. BLAIR, Sup't Experimental Station, Kentville, N. S.

CULLING THE FLOCK.

(Experimental Farms Note.) By the use of the trapnet the flock may be accurately culled so that only those birds which have given a profitable production need be retained; but for the vast majority of farmers and poultry keepers this method is not practicable in that trapping takes more time than they are able to devote to it. Therefore it becomes necessary for those who do not use trap-nests to use the less certain, but still practicable, method of culling by visual evidence.

The heavy-laying hens will be sprightly and active in appearance, will have a clean-cut head, lean face and prominent eyes, a large moist vent and a full abdomen which will be soft and pliable. After she has laid heavily for a time, if she is the yellow-skinned variety, the color will have faded from her vent, eye-ring, beak and shanks, and her plumage will look the worse for wear, the feathers of the tail in all probability being badly broken from rubbing against the sides of the nest box.

It is safe to cull all birds that show decidedly weak constitutions; those that show great age; and those that are coarse in the head, thick in the skin and show heavy internal deposits of fat. This last condition is evidenced by a full hard abdomen. Besides these indications there are others—the opposite of that is expected in a good layer—that, taken collectively, are fairly sure. A dry puckered vent, or a dry shrivelled comb, indicate that the hen is not laying at the time; rich yellow legs and beak usually indicate either that the hen has laid very few eggs or that she has taken a sufficiently long rest to allow the color time to return; smooth lustrous plumage indicates that there has probably been no great drain on the system and unbroken plumage indicates that she has probably not spent much time in the nest.

While it takes experience to cut accurately where close culling is desired, the wise poultry keeper will not hesitate to make a start, as the rank waterer may be readily recognized even by the inexperienced. With increased experience close culling may be practiced.

USE THE FANNING MILL

The use of a fanning mill is almost imperative on every farm. A good fanning mill properly handled will remove weed seeds and many of the dead and weakened grains.

If any farmer will take the trouble for one half hour to count the weed seeds and diseased grains in a pound of the grain he intends to sow, he will find that the half hour is well spent. Invariably he will get a surprise at the quantity of weed seeds he will find in a sample of 1200 weed seeds bought as clean seed, or produced on his own farm under careful husbandry. It is far better to make this test than trust to the sample being "cleaned" seed. The writer picked out 16 weed seeds from one half pound of wheat that was stated to be cleaned for seed purposes. Sixteen seeds in one half pound of wheat is a heavy load in a bushel this wheat. Wherever this condition is found, steps should be taken to improve the seed as much as the facilities at disposal will permit. There is no doubt but that such a half hour would prove to be more profitable than any ten that will later be spent in producing the crop. A good fanning mill properly handled is an indispensable help in clearing the farm of weeds, and right now is the time to use it.