

## GLEANINGS.

### *Golden Rules for Farm Machinery.*

1. Keep all nuts well fastened.
2. Give sufficient lubricating oil and see that it reaches the right spots by keeping all oiling apparatus in good order and opening up all little oiling holes.

3. Put fresh paint on when and where necessary,

(Dep. Agr. S. Afr. March 1924.)

*Live stock of India.* It is estimated that there are over 34,900,000 sheep and 31,500,000 goats in India, and about 143,000,000 cattle. Horses number only about 2,100,000, while there are about 1,500,000 asses and 80,000 mules. The main draught animal is the buffalo, which numbers about 36,000,000, and there are over 500,000 camels.

(The Scottish Farmer Nov. 1924.) S. N.

*Value of Vegetables.* Eat lettuce and onions for worn nerves. Beet and turnips give Iron to the blood. Tomatoes stimulate a torpid liver. Celery is good for rheumatism. Beetroots are nourishing and laxative. Carrots cleanse the blood and clear the complexion. Asparagus is beneficial to the kidneys. All kinds of greens in spring help to cleanse the blood and regulate the system.

(The Scottish Farmer Nov. 1924.) S. N.

*Pest Act Enforcement against Water Hyacinth.* The Government of Madras have directed the extension and application of the Madras Diseases Pest Act of 1919 in the District of Madura till August 13th, 1925, in order to adopt measures for the destruction of water hyacinth which has proved a serious pest, productive of illness in its neighbourhood.

*Silk Cotton in Java.* Of the kapok gathered in Java most comes from trees planted originally for other purposes. The greater part of the crop is only a by-product, for the trees are planted on either side of the road to protect cacao and coffee plantations. Even when planting is done for the sake of the tree itself, the main purpose is to use the trees as a prop for pepper plants. The export of kapok from Java is estimated at about 10,000 tons a year, and of this quantity 9,400 tons are furnished by kapok trees planted to shelter and prop other plants. The Silk Cotton tree from which kapok is derived is a common species.

*South African Association for the Advancement of Science.* The 22nd Annual Meeting of the South African Association for the advancement of Science was held at Cape Town on July 7-12 under the Presidency of Prof J. A. Wilkinson, Professor of Chemistry in the University of Witwaterstrand, Johannesburg. More than 80 papers were read. The Presidential address was on "A Review of some Development in Chemistry during this Century."

The next Annual Meeting will be held at Oudtstorm under the Presidency of General J. C. Sunte in July 1925.

(Nature Nov. 29, 1924).

*Ceylon Journal of Science.* The Ceylon Journal of Science has been established by the Ceylon Government for the publication of scientific and other researches. In the first instance the journal will consist of seven sections, Botany, Zoology and Geology, Medical Science, &c. Each section will be a separate publication with its own editor, having its own pagination and appearing independently of other sections. For the purposes of general administration the Journal will be controlled by an Editorial Board, consisting of a chairman (Joseph Pearson D. SC, F. R. S. E) and 15 other members.

*Australasian Association for the Advancement of Science.* The Seventeenth Meeting of the Australasian Association for the Advancement of Science was held in Adelaide, South Australia on August 25 to 30 inclusive. Sir John Monash—the President—gave his inaugural address on the evening of August 25th, the subject being "Power Development".

The Eighteenth Meeting will be held at Perth, Western Australia in August 1926, the President being Sir Thomas R. Lyle, and the Government of Western Australia has promised £. 1200 mainly towards the Expenses of defraying the cost of the publication of the Proceedings.

The Nineteenth Meeting will be held at Hobart, Tasmania in January 1928 with the promise of financial support from the Tasmanian Govt.

(Nature, p. 877. 13—12—1924.)

*Symbiosis of Seeds and Bacteria.* Gilbert J. Fowler and Miss. R. K. Christie writing in the Journal of the Indian Institute of Science, Vol, VII, Part XIII, pages 253-272, on "Studies relating to the symbiosis of seeds and Bacteria" observe that (1) Every seed so far examined has been associated with specific bacteria, either within

the seed (poppy), within the husk (rice), attached to the seed by the mucilage coat (*Cassia tora*) or residing on the testa (indigo-seed). (2) No part of indigo-seed by itself is capable of fermentation. (3) All poppy-seeds so far examined (field, garden and market) contain bacteria. (4) So far poppy and barley are the only two types of seeds found to contain bacteria; others have them on the outside. (5) Bacteria associated with the seed are not essential to its germination. (6) They are helpful to growth of seedling. (7) They break down seed-proteins, converting them into simpler substances assimilable by plants. (8) This property is not restricted to particular seed-proteins but is extended to those of quite different types. (9) Every seed so far examined has a specific extractive, removable by water or other suitable solvent and having a well-defined basic or glucosidic nature. (10) Extracts of seeds are not always of an antiseptic nature but in very small doses act as stimulants to growth. (11) Washed indigo-seeds germinate better than unwashed ones owing to presence of toxic substances in the latter.

*Some Curious Practices and Beliefs re-Sugarcane Cultivation.* A piece of bear-skin is in some places suspended in the water channel as a check against white ants.

A mixture of camphor and asafoetida tied in a bag is in some localities suspended in the water channel as a remedy for the borer.

Leaves of the wild Fig tree are sometimes put into the juice-collecting pans as they are supposed to be useful in keeping the juice sweet.

A piece of pepel or doem pepel (*Shorea cochinchinensis*) or the bark of *Shorea-robusta* (Indian Damar, Kungilya Maram (Tamil), Guggilam (Telugu) is also said to keep the juice sweet.

The juice from Kajli or Kali of Bengal and Kusari of Orissa is reported to contain medicinal properties and to be used in the treatment of insanity and of brain and eye diseases.

A cane called Mani is believed to be poisonous. When small pox prevails, some low caste people in Baroda are reported to dedicate it to the Goddess to cure the sick.

K. K. RAO.

*Come sets for planting.* From the Louisiana Planter of the 13th instant, we learn that an Australian has patented a new method of treating cane before planting. This consists in soaking the freshly

cut sets in a lime bath for 12 to 36 hours and planting them out while they are still in a quite wet and swelled condition. It is claimed that this process prevents the newly made cuttings from going sour while sets not treated become sour and if much rain falls, they ferment and the eyes turn black and die. The treated sets swell and the eyes become prominent and shoot earlier. The borers and the insects are destroyed and the young seedlings make rapid growth, hoeing coming on earlier. The treated cane has a much stronger stalk, keeps an upright position and being healthy, and sound, it is decidedly sweeter.

A. U. M.

*Honey as a stimulant.* Honey sweet is a combination of glucose and levulose in nearly equal parts, two of the several different kinds of vegetable sugar existing in nature.

Levulose is a fruit-sugar that has real medicinal value, being readily tolerated in diabetic tendencies, or even decidedly beneficial. It is the only form of sugar that can be assimilated into the blood without any preparation. All other sugars must be converted by digestive processes before they are used by the human system.

Honey, then, is the only sugar supplied by nature in a form ready for instant use. It is a quick and lasting stimulant in cases of exhaustion and nervous collapse, as well as extreme fatigue. A teaspoonful of honey in half a glass of water, either hot or cold, will restore exhausted energy wonderfully, with only a beneficial reaction. No "dull gray dawn of the morning after" follows the use of honey, either as stimulant or food.—Better Fruit.

(Agricultural Gazette, N. S. W., Nov. 1, 1924).

*Time interval between births of Children.* BY E. C. RHODES  
BIOMETRIKA VOL. XV 1923.

The material was taken from the records of the Whitney Family.

It was seen that the mean interval between births on the whole increased with the date of marriage.

The average number of children born in a fixed length of time from the date of marriage decreased. There is a gradual lengthening of the interval between births as more children are born. Thus when there are 6 births in the period, the interval between 1st and 2nd births is less than that between the second and third which in turn is less than that between the 3rd and 4th, which is less than that between the 4th and 5th, which finally is less than that between fifth and sixth

The sex of a child has no influence on the length of the interval from its birth to the birth of the next child. V. R.

*PAVLOV—the great Russian Physiologist.* On Sep. 27, '24, Ivan Petriovitch Pavlov—the great Russian Physiologist—completed his 75th birthday. After different ideas had been suggested by his pupils, Pavlov smiled and said, "Well, from my experience, the problem seems very simple, although hard to perform. There is only one method: concentrate all the powers of your soul and body on one idea, which you investigate. Stick to it for many years, think of it daily and dream about it during your sleep. That's all." The results of Prof. Pavlov's work in the three departments of physiology he has studied are brilliant.

During 1920 and 1921, he and his family suffered badly from lack of food. He was obliged to spend valuable time in domestic work and in searching for food and fuel. In spite of this, Pavlov continued his work, at that time in unheated laboratories, hungry himself with hungry pupils, giving an example of a truly great man, who lives for one thing only—the pursuit of truth.—*Current Events and Topics*

(Extracted from *Nature* Oct. 4, 1924).

*Psychology in Dairying.* Dairy cows form very strong habits, and if the dairyman makes use of this trait much of the routine work becomes simplified and easier. Regularity in systematic operations is essential. Irregularities worry cows and undoubtedly affect the milk-yield, milk production is largely a matter of nervous force. Ordinarily cows are milked twice a day at regular intervals, morning and evening. High-producing cows, however, should be milked more frequently. Whatever the periods, the milking should be done punctually and regularly, quietly and thoroughly, by intelligent, capable, cleanly and kind milkmen. If possible, milkmen should always milk the same cows; cows resent strange milkers. It is a good practice, supported by cow psychology, to let the milkman remove her calf and feed her a tempting ration of bran mash—she will adopt him and yield her milk to him willingly and liberally.—P. J. V. D. H. Schreuder, in the *South African Journal of the Department of Agriculture.*

(Agricultural Gazette, N. S. W. dated Nov. 1, 1924.)

*Magnesium sulphate as a preservative.* As a result of tests of the value of magnesium Sulphate crystals as compared with naphthaline against silver-fish (*Lepisma*) in linen cupboards it was found that the former was far more effective. At the end of five months the cup-

boards under naphthaline were much infested and the naphthaline had deteriorated. Even after 12 months those under magnesian sulphate were not infested, and only a little deterioration had occurred. The conclusion arrived at was that magnesium sulphate is of far greater efficiency than naphthaline for protecting linen and other materials against such pests as moths and cockroaches in closed spaces, but that it deteriorates rapidly in the open—P. Mitchell in "Health" II, No 3, pp. 84-85—Melbourne May 1924.

(Rev. App. Ent. Vol. XII Ser. A, pt. 8)

*The Adaptable Dutch Farmer.* There is ample evidence that what chiefly set Dutch farmers to use all their wits, and to seek and value scientific and commercial instruction, was the gracious pinch of foreign competition. While in the 1881-90 period the Dutch grew 86,000 hectares of wheat a year, by 1907 they had cut down to 54,000 hectares a crop which they realised was being grown in competition with areas overseas more advantageously situated. On the other hand, in response to new opportunities, mangels and beet areas have been enormously increased. A district to which a guide-book a few years old would send visitors in order to see cheese-making has devoted itself for some time to market gardening. Elsewhere fishermen as well as farmers have become nurserymen. At a recent agricultural exhibition of Dutch produce in this country a Briton was heard to complain of the perfidy of the Dutch in putting cheese on the market at a time of the year when high prices are paid, "and then at a low time of the year doing something else." Just so. Three years after the Dutch agricultural commissioner in London advised Dutch farmers to produce cheddar I found one province alone marketing £40,000 in a twelve month.—J. W. Robertson Scott, in the *Scottish Journal of Agriculture*.

(Agricultural Gazette of N. S. W. No. I, 1924).

*Causes of Anger in Bees.* There are three things that may cause anger in bees, says the *American Bee Journal* in reply to a correspondent's query on this subject. First, the ill-disposition natural in some breeds; second, improper handling; and, third, unfavourable conditions.

Langstroth laid it down as a principle that when bees are filled with honey they are like a man who has eaten a hearty meal and little disposed to sting. Not only are they satisfied, but the filling of their honey sac causes the body to be distended and makes it inconvenient to curve their abdomen as they do when stinging. So, during a good crop, bees are likely to be good-natured; nor will the entrance guards be so irritable as when robber bees are constantly about.

Bees are frequently angered by mis-handling—by knocking the hives so as to disturb them when they are quiet—by leaving the hives open during a dearth so that robbers are encouraged—by neglecting to use a little smoke when handling—and by making quick motions when in their vicinity.

There are breeds and sometimes special colonies which are readily angered; they are usually powerful colonies, often hybrids of different races. The angry disposition of bees that have been carelessly handled may persist for quite a long time. "We have often removed the queen and replaced her with a queen of gentle breed when they appeared to have lost their gentle disposition," adds the journal.

(Agricultural Gazette of N. S. W. Nov, 1, 1924)

*Is Sodium Arsenite Injurious to Soils.* The question of possible injury to soils and to crop growth from the continued use of sodium arsenite used for seed destruction was investigated by the Hawaiian experiment Station in 1915, and as a result of these experiments it was ascertained that small quantities of arsenic stimulate plant growth, the crops tried being millet, buckwheat, and cowpea.

The most surprising feature of the investigation as reported in the *Journal of Agricultural Research*, Vol. V. p. 459, was the influence on ammonifying and nitrifying bacteria. In one type of soil, ammonification was stimulated even by such excessive amounts as 1 per cent. arsenious acid (As<sub>2</sub>O<sub>3</sub>) in the soil. The results as a whole indicated that no fear need be entertained regarding any detrimental influences toward the organisms upon which the plants rely for their nitrogen, provided proper soil texture is maintained. Further more, it was found that the arsenic practically loses its toxic influence towards plants, forming insoluble compounds with iron and aluminum.

To give a concrete example, land was sprayed for five years for weed destruction at the rate of three applications per year, using 5 lb. arsenious acid (As<sub>2</sub>O<sub>3</sub>) per acre for each application. The surface 4 inches of soil was found to contain .0092 per cent. arsenious acid, and none was present below that depth. Only .00006 per cent. arsenious acid was soluble in water. Soils therefore possess strong fixing power for arsenic, and when a sodium arsenite spray is used for the destruction of weeds the arsenic will ultimately be deposited in the surface soil, there to remain in spite of the leaching effect of rains or irrigation.