could be desired; those from Allahabad were good but contained rather much water. But they are all a very great advance on what is generally made and sold as butter, chemical analyses showing that the latter contains very much more curd and water than well-made butter, and in the matter of cleanliness there is no comparison.

Vet. Capt. Mills, Principal of the Bombay Veterinary College, and late Inspector of Cattle Diseases in the Madras Presidency, gives the following advice:—"*Young animals which have not yet completed their growth, must not be allowed to breed.* The small size of many Indian breeds has undoubtedly been brought about by a neglect of this rule. Young stunted progeny is the result, and in due course produce still smaller animals. There is much danger of this under the ordinary method of cattle management in this country. Directly the young female feels inclined to breed, the male covers her, and thus she becomes big with young before she has strength to support the calf, or to give enough milk for it after birth. Consequently, the growth of the mother is prevented, so that the unborn young may get nourishment to keep it alive. Much harm is done to males by allowing them to cover too early and too freely; they become uncertain getters of young, and are very early worn out and unfit for breeding. They, too, become thereby stunted in growth, and apt to beget small and unhealthy offspring. If young bulls, unfitted for breeding were castrated before they were 6 months old, instead of at the age of 5 or 6, much good would result, as only the selected bulls could then be used for breeding."

The hardships which native cattle often suffer during the hot season are well known, but the remarks of Capt. Mills under this head also deserve to be quoted as applicable to the state of affairs in our Island:—"Most Indian cattle select their own food from the grazing grounds of the village during the day time, and when they are brought in at night some are given paddy, straw, and other food. Instinct usually enables animals to decide what is good for food, but often want of water has so dried up the herbage that cattle have to appease their hunger by eating whatever they can find. When all grass is dried up, they may be seen eating the bark of trees, prickly shrubs, and poisonous plants, such as at other times they would refuse. This is a frequent cause of disease, such as indigestion and poisoning. When the rains set in, all along the edges of rivers and tanks, coarse grass and rank herbs grow in abundance, and are very dangerous to cattle, because when eaten they may produce colic, gas in the stomach, or diarrhœa, and some of these rank herbs are very poisonous. Thus, we see that too little or too much food many cause disease; therefore the supply should be so managed as to insure enough in dry weather, and not too much in the rainy season. The best way of regulating this is by storing fodder when it is plentiful, to make up for deficiency in dry seasons and famine years. *This is one of the most important means of preventing cattle disease in India. Outbreaks of disease prove much more serious among badly-kept and weak animals, than amongst those which are well fed and cared for.*"

Mr. Kipling, author of "Beast and Man in India," thus describes a case that came under his notice, showing the great importance of fresh air to cattle:—"I remember being told that our cow which had recently calved, was suddenly taken sick and like to die. The cow-man had decided that she was suffering from an unusual form of deadly fever. So in the fierce hot weather he had her shut up in a close byre, stuffed the window with rags and straw, carefully closed the door, and wrapped her in thick clothing. She was very likely to die indeed, but recovered promptly on being rescued from heat and suffocation."

THE SALT MINES OF KHEWRA.

The salt hills of the Punjab are not usually found marked on the atlases used in schools, but the range is understood to extend from the town of Thelum eastward to Kalabagh on the Indus. There is a salt range extending beyond Kalabagh, across the Indus, but the salt is of a different age and position. The Cis-Indus Range lies between 73° 30′ and 71° 30′ East Longitude, and between 32° 23′ and 33° North Latitude,—historic ground, famous alike in ancient and in modern times.

Khewra is the name of the village where the most important of the mines are worked. These are called the Mayo Salt Mines in honour of Lord Mayo who visited them when Viceroy of India. The only inhabitants of Khewra are those whom the work connected with the mines renders necessary, but a railway makes communication with Thelum and Lahore easy. The depôt where the salt is collected and despatched is called the Warthganj depôt, after Dr. Warth, who was once the Collector of the Salt Rang district, and to whom the development of the mining industry is greatly indebted. In 1889, there were two European officers working in this depôt; there may be more now. Another officer was in charge of the mines, and above these was the Assistant Commissioner, with judicial power.

The Mayo Salt Mines are not mines in the sense of being far beneath the surface of the ground, like a coal mine, for instance. At the base of a high ragged hill there are two or three openings like the mouths of tunnels, and through these tunnels we walk or are trollied along, accompanied and guided by miners with torches and little earthen saucer-lamps called *dhivas* to light up the encircling darkness. When the first sensations of novelty and bewilderment are diminished, we look above and around us, and see nothing but salt,—salt floor, salt walls, salt roof, all blackened and begrimed with the soot from torches and *dhivas*. Sometimes we come upon large recesses (called *stations*) where salt ready for removal is collected; sometimes we meet trucks passing by us carrying salt to the depôt, or returning empty for another load; and sometimes a dark patch on the wall marks a passage leading upward, downward or in some horizontal direction to the different "chambers" where the miners work.

The salt, it may be noted, is rock-salt, and is obtained first by blasting, and then by cutting with a rough pick. The miners are so accustomed to the work that the little *dhivas* are all the light they require, and it is astonishing with what regularity and neatness the walls of the chambers are cut. These chambers are immense rooms—one of them being 320 ft. long and 150 ft. high. They are seen at their best when a small paper balloon is sent up and the surrounding space is thus lighted up. There are several "Show Rooms" of this kind into which visitors are taken.

The salt obtained is generally of a pink or pinkish colour, sometimes a dirty or muddy pink. Natural salt is said to be found in almost every colour—red, brown, green, blue, &c., but here the prevailing colour is pink. The transparent crystal salt is also found. A solid rectangular block of 37½ cubic ft., and weighing 2⅞ tons was sent to Vienna Exhibition of 1873. The quantity of rock-salt in this range is practically inexhaustible. It has been calculated that "if an average thickness of only 135 ft. and a width of 3 miles be assigned to the salt beds, then, in the 130 miles along which these are seen there may be 130 miles × 3 miles × 135 ft. of beds, giving as the solid content of the salt deposits nearly 10 cubic miles." As for the quality, Dr. Warth declared that the salt is "of a purity such as few known salt mines of the earth can yield. There is no such salt in England, nor in most mines on the Continent."

In concluding these notes it may be stated that the actual cost of production is said to be under 2 as. or 12 cts. a maund (=82 lbs.). But the Government duty on each maund is R2·8, so that to obtain a maund of salt at the mines the buyer has to pay R2·62.

L. E. B.

BY HIGHWAYS AND HEDGES.

Hydrocotle Asiatica (the native name of which is *Hin-gotu-kola*) is a common enough weed in the Island. The plant, which is of a creeping habit, and is characterised by roundish or kidney-shaped leaves, is officinal in the pharmacopœia of India. The leaves which are the part used, contain a pungent, pale-coloured, bitter, volatile oil named *vellarine*, and act as an alterative tonic when administered internally, as well as a stimulant when locally applied. Attention is being drawn in N. S. Wales to the medicinal properties of this plant which is said to be "credited locally as valuable when applied to wounds or sores in the form of a salve or poultice." *The Pharmacographia Indica* confirms the above estimate of the therapeutic value of the drug, and also states that it is so abundant in the Mauritius that it serves as forage for cattle, whose milk it improves; it is also said to be greedily eaten by pigs and other domestic animals. The plant is much used in native practice in Ceylon for purification of the blood, checking dysentery, and promoting digestion, as well as for curing nervous and skin diseases. Thwaites mentions that it is also used as an anthelmintic.

Panicum crus-galli, or barnyard grass (Sin. *Welmarukku*) is a grass common in the hotter parts of the Island. In Australia, to which it is native, *P. crus-galli* is much esteemed as a nutritious grass which produces an enormous quantity of feed. It is there said to be greedily eaten by horses and cattle, and to make a hay of good quality. In parts of America, it is mowed annually, and as much as 4 or 5 tons of hay are harvested per acre.

The Deputy Conservator of Forests, Andaman Islands, stated in reply to an official circular that "the possibility of creating a regular export trade in East Indian walnut (*Albizzia lebbek*)* from India appears to be well worthy of the consideration of the Forest Department as well as of timber merchants in Europe and this country." The wood seasons well, is easily worked and curved, develops a beautiful grain, and is susceptible of a fine polish. Owing to these and other good properties it produces pretty as well as substantial furniture, and the small consignments which have been occasionally sent from the Andamans to London have commanded for this purpose a ready sale. In India it is much used in ornamental carpentry and cabinet-making; and, owing to its hardness and fair durability, for sugar-cane crushers, oil-mills, well curbs, wheel-work, &c. It is also highly suitable for house building, although people in the northern provinces have a superstition that it is unlucky when applied to this purpose. The "East India walnut" [not to be confounded with the true walnut of India (*Juglans regis*)] is found wild or cultivated in most parts of the empire, Bengal, Bombay, Madras, and Burma. Specimens have been forwarded to the Imperial Institute from the Terai forests of the Darjeeling district, from Satara, Poona, and other parts of the Western Presidency; from South Arcot, Malabar, &c., in the South; from Thayetmyo in Upper and Tenasserim in Lower Burma. The growth of the tree, which is said to attain a height of from forty to sixty feet, with a girth of six to eight, and at times even ten to twelve feet, is exceedingly rapid. Seventeen-year-old stems have been found in Sukkur, Sindh, to girdle five to six feet. The former Burmese Government, it is said, thought so highly of the timber (known in their vernacular as *kuk-ko*), that a higher tax was fixed on the felling of it than on that of any other tree. Burrs of the East India walnut, as in the case of other furniture wood, increase in value with the intricacy and rarity of the design and the size of the burr. These, are, as a rule, sliced up into veneers, and cost not uncommonly ten to twenty times that of the plain wood; indeed, as high as one hundred times the value of the ordinary timber has been paid for extremely curious and unique specimens.

The Révue de Eaux et Forêts, in an article on the effects of humus on vegetation, observes that young trees require more nitrogenous matter than old ones, and these latter penetrate deeper into the sub-soil and lower layers, which contain more nitrogen than the upper layers. For these two reasons the removal of the covering of dead leaves must necessarily have greater influence in the case of young crops.

* Known among the Sinhalese as *Mara*, and found in the Anuradhapura and Badulla districts.