

## SHOWS BIG WASTE

Important Fertilizing Material Is Thrown Away.

Only 25 Per Cent. of Country Tankage is Available, and Lost Products in the Distillation of Coal Amount to Millions.

Washington.—Seventy-five per cent. of a highly valuable fertilizing material in the form of tankage and blood from the country slaughter of food animals is being wasted throughout the country districts. In addition \$22,000,000 worth of ammonia from which ammonium sulphate, another valuable fertilizing material could be made, is annually wasted by the practice of making coke in the beehive type of oven, according to a recent bulletin of the department of agriculture.

Tankage, a product of slaughterhouses consisting of such waste material as bones, horns, hoofs, hair, etc., contains a large percentage of nitrogen and other products used in commercial fertilizer and in the larger packing houses is carefully saved. In country killing, however, only 25 per cent. of the tankage and blood are saved for fertilizer. The nitrogen content of tankage is said to vary from 5 to 8 per cent. and its phosphoric acid content between 5 and 12 per cent.

Dried blood is perhaps the richest in nitrogen of all the organic materials used in the fertilizing industries. Unadulterated blood when quite dry contains 14 per cent. of nitrogen, but as obtained on the market its content varies from 9 to 13 per cent.

From the figures estimated by the bureau of animal industry, department of agriculture, as representing the total slaughter of cattle, calves, swine, and sheep in the United States, in 1912, it has been calculated that if all the materials rendered available by this slaughter had been saved and converted into tankage and dried blood, they would have produced 222,536 tons of tankage and 79,794 tons of dried blood.

The introduction of a co-operative system among American farmers undoubtedly would result in an increased utilization of blood and tankage for fertilizing purposes. In Denmark country killing is being practiced on a co-operative basis in small country abattoirs, and the blood is carefully preserved.

The loss of ammonium sulphate which compares favorably with sodium nitrate as a plant stimulant in the distillation of coal for the production of coke, is described in the bulletin as follows:

"In the main, coal is distilled in this country in that form of coke oven, the beehive oven, which does not admit of the recovery of the distillation products. Instead, they are allowed to go to waste. So we are indebted to the by-product recovery oven for the main supply of ammonium sulphate. The amount recovered is valued at about \$4,000,000, while the recoverable ammonia annually destroyed in the coking processes by the beehive ovens is valued at \$22,000,000.

At the beginning of 1912 there were 4,624 by-product coke ovens in operation in the United States and 698 building."

The great product of Chile, sodium nitrate, possesses less nitrogen content (15.5 per cent.) than ammonium sulphate. The United States, however, imports a great quantity (in 1911, 70,000 tons) for use in agriculture, owing to the deficient supply of other fertilizers in this country. This is only a small part of the total amount of sodium nitrate America imports yearly from Chile, as it has many other uses.

The more intensive agriculture of recent years has emphasized the demand for nitrates, and the fact that the Chilean beds of nitrates have been surveyed and figures have been obtained which make possible a fairly close estimate of the amount of nitrate remaining there should stimulate the manufacture of nitrogenous substances suitable for fertilizer manufacture, and serve as a warning against undue waste.

Artificial nitrates have become commercially important to supply the demand in this country, calcium cyanamide being perhaps the most nitrogenous material manufactured for fertilizer purposes. It is prepared from calcium carbide and free nitrogen, the latter being prepared from the atmosphere by the removal of oxygen. This industry is considered to be as yet only in its infancy, and with the increased capacity of existing factories and extensions now under way should prove an important factor in the present source of nitrogenous fertilizers.

The relative values of the different fertilizers are brought out fully in this bulletin (No. 37) which can be had on application to the division of publications, United States department of agriculture, Washington, D. C.

Imported cattle inspected by the bureau of animal industry, U. S. Department of agriculture during October and November, 1913, number 209,327 head, as compared with 72,420 for the corresponding period of 1912. All came from Canada and Mexico except 447 head of purebred cattle, for breeding purposes, imported from Great Britain. The imports were classified as follows:

October—For immediate slaughter, 73,166; as stockers and feeders, 54,565; for dairy and breeding purposes, 739; total, 128,470. November—For

immediate slaughter, 39,086; as stockers and feeders, 41,548; for dairy and breeding purposes, 223; total, 80,857. The bulk of the slaughter cattle came from Canada, while Mexico furnished over four-fifths of the stockers and feeders.

Imported meats and meat-food products inspected during October amounted to 6,000,735 pounds, and in November to 11,792,576 pounds, making a total of 17,793,311 pounds for the two months. The bulk of this consisted of fresh and refrigerated beef, 16,082,578 pounds. There were 275,847 pounds of other fresh and refrigerated meats. The remainder consisted of cured and canned meats, 1,169,517 pounds, and other products (sausage, compound, and oleo stearin), 265,369 pounds. Of the total, Canada furnished 5,098,197 pounds, Argentina 6,209,700 pounds, Australia 2,725,142 pounds, Uruguay 559,843 pounds, and other countries much smaller quantities. Of these imports there were condemned in October 4,690 pounds and in November 14,123 pounds, or a total of 18,813 pounds.

The secretary of agriculture has announced the appointment of the following committee to conduct a general inquiry into the various factors which have brought about the present unsatisfactory conditions with respect to meat production in the United States, especially in reference to beef, with a view to suggesting possible methods for improvement:

Dr. B. T. Galloway, assistant secretary of agriculture, chairman.

Dr. H. J. Waters, president Kansas State Agricultural college.

Prof. C. F. Curtis, dean and director Iowa State college.

Prof. H. W. Mumford, professor of animal husbandry, University of Illinois.

Dr. A. D. Melvin, chief, bureau of animal industry, U. S. department of agriculture.

Dr. T. N. Carver, director, rural organization service, U. S. department of agriculture.

The work of the committee will be centered largely on the study of economic questions involved in the production, transportation, slaughter and marketing of meat. As the first step the committee will investigate carefully the changes within the last two or three decades which have increased cost of production, and the centralizing of the meat industry. Among the important considerations to be gone into will be the taking up of the public lands, the effect of the capacity of the range, especially on the remaining public lands and forest reserves, with a view to suggesting changes in the laws to make the public lands of greater use in cattle raising. The committee also will give special attention to the economic changes in meat production and distribution brought about through the centralizing of slaughtering and meat preparations in large packing establishments, and the changes in transportation and similar matters which have resulted from this centralization and other causes, and the economic possibility of communal and community effort in cattle raising and the advantages of establishing local or municipal abattoirs will also be investigated.

The committee will not deal specifically with questions of animal husbandry which has to do with the actual breeding of cattle, as this work will be left to the specialists in the department and state agricultural colleges in this field. The appointment of a committee will not interfere in any way in any of the state agricultural colleges or experiment stations. The letter of appointment announces that the chairman within a short time will supply details regarding the scope of the investigation and the lines of work which the committee might take up.

The foreign commerce of the United States in the calendar year 1913 approximated \$1,750,000,000 of exports, 750,000,000 of ports and \$2,500,000,000 of imports.

The imports of the 11 months ended with November were \$1,609,000,000, and should the December imports equal those of November, the total for the full year would be \$1,756,000,000.

The exports of the 11 months ended with November were \$2,251,000,000, and should the December exports equal those of November, the total would be \$2,479,000,000. This estimate would make the excess of exports over imports approximately \$740,000,000.

The figures of exports and of excess of exports over imports will exceed those of any earlier year. The largest export of any preceding calendar year was that of 1912, which showed a total of \$2,399,217,993; and as the 11 months ended with November are \$1,609,000,000 in excess of the corresponding period of the preceding year, the estimate of approximately \$2,500,000,000 for 1913 seems to be justified. The excess of exports over imports in the 11 months ended with November was \$642,000,000, and for the single month of November \$97,000,000, thus apparently justifying the estimate of \$740,000,000 excess of exports for the full year.

In imports, the total for 1913 will be less than that of 1912 but larger than that of any year preceding 1912. This decline in imports in 1913 is due in part to reduction in prices of certain articles imported. While the quantity of sugar imported in the ten months ended with October exceeded that of the corresponding period of 1912 by 368,000,000 pounds, the value of this larger quantity imported during the 1913 period was \$22,000,000 less than that of the corresponding period of 1912.

which, now called the Liberty Cap cent, had the profile of Washington on one side and a peculiarly shaped liberty cap on the other. The bust of Washington represented him in epaulettes and a ruffled shirt. The Liberty Cap cent of 1793 is worth \$4; 1794, 35 cents; 1795, 50 cents.

The Evidence. "How was the matinee, Felice?" "I have never before enjoyed a play so much. Just look at this handkerchief! It's soaked with tears."

## SCHWAB YEARNS FOR HAPPY BAREFOOT DAYS

"Those times were real and splendid." A mist spread over the eyes of Charles M. Schwab as he proposed a toast to "Cambrian county, Pennsylvania," the home of his boyhood.

Like a flash his mind had gone back from his mansion in Riverside drive to the humble days in Loretto, near the top of the Allegheny mountains. He referred to the days when, as a youngster, he went swimming with the rest of the gang; to the days in the winter when, warmly clad and wearing those old ear-lugs, he had gone hunting for chipmunks and rabbits and then had gathered with his little pals in a lean-to to have a campfire feast.

That was the time when he was a happy youngster and had no thought of wealth. Gathered about him in his home in Riverside drive in New York the other day were the friends of his boyhood and of his early manhood. There was A. W. Buck, whom he had known as a boy, and who now is a prosperous banker of Ebsenburg, Pa. There was Judge Francis J. O'Connor, jolly and rotund, a friend of many years. There were 60 of them all told—old-time friends when a friend in need was a friend. There was a son of some Mr. Schmidt's boy-

hood friends. They were part of the members of the Pennsylvania society who had come from Cambrian county to attend the dinner, and were being entertained by Mr. Schwab. They are all successful men now, several of them being judges, others merchants and wealthy business men. Mr. Schwab showed he was happy to see them. He was glad to welcome them in his home, with its costly paintings and its exquisite decorations, the friends of what almost might be termed "the barefoot days." That Mr. Schwab remembered these days was shown by his manner when he proposed the toast. He quickly changed the subject, and with his characteristic happy way he said:

"But this place is just a copy of the old place in Loretto."

Mrs. Schwab and he welcomed the guests. Mr. Schwab had not forgotten a single name, nor even a "nickname," but, of course, he had to be introduced to some of the wives of the old friends.

Mr. Schwab showed his guests his art room, where he has gathered, as far as he could, the best painting of the artists that he admired. To the wondering question of a visitor he said that the paintings were insured for \$3,000,000.

Then the visitors wandered about the house under the guidance of Mr. Schwab, and listened to music from the pipe organ.

"Oh, I live here for a few minutes of the year," he said laughingly to one friend.

Mr. Schwab's father and mother also were present and they saw again friends who live in Ebsenburg, Loretto and Johnstown.

Her generosity is the despair of her secretary, as, entirely regardless of the state of her balance, she insists on giving handsomely to any suddenly arising case of public charity.

This is especially resented by the queen, who has to go one better or else not contribute at all, and she has done the latter more than once.

Since the dowager empress of Russia has come to share Sandringham with her, Queen Alexandra's expenses have been greatly reduced, and consequently this year she gave handsomer Christmas presents than ever.

Queen Mary's frugality, on the other hand, is displayed at this season. When she has a dress made all the spare pieces of the stuff, whatever it may be, are collected and sent to her by the dressmaker, and these are handed over to Queen Mary's sewing maids to contrive sachets, pillow covers and such like out of them.

This Christmas she had a large number of nightdress cases made from the clippings, and these were sent around Christmas to her women friends.

Queen Alexandra was born December 1, 1844.

Everywhere Queen Alexandra is seen in the West end these days the invariable exclamation is: "How wonderfully young she looks, and more charming than ever!" She is really a woman who is as

sweet and womanly as she looks. Her generosity is the despair of her secretary, as, entirely regardless of the state of her balance, she insists on giving handsomely to any suddenly arising case of public charity.

This Christmas she had a large number of nightdress cases made from the clippings, and these were sent around Christmas to her women friends.

Queen Alexandra was born December 1, 1844.

Everywhere Queen Alexandra is seen in the West end these days the invariable exclamation is: "How wonderfully young she looks, and more charming than ever!" She is really a woman who is as

sweet and womanly as she looks. Her generosity is the despair of her secretary, as, entirely regardless of the state of her balance, she insists on giving handsomely to any suddenly arising case of public charity.

This Christmas she had a large number of nightdress cases made from the clippings, and these were sent around Christmas to her women friends.

Queen Alexandra was born December 1, 1844.

Everywhere Queen Alexandra is seen in the West end these days the invariable exclamation is: "How wonderfully young she looks, and more charming than ever!" She is really a woman who is as

sweet and womanly as she looks. Her generosity is the despair of her secretary, as, entirely regardless of the state of her balance, she insists on giving handsomely to any suddenly arising case of public charity.

This Christmas she had a large number of nightdress cases made from the clippings, and these were sent around Christmas to her women friends.

Queen Alexandra was born December 1, 1844.

Everywhere Queen Alexandra is seen in the West end these days the invariable exclamation is: "How wonderfully young she looks, and more charming than ever!" She is really a woman who is as

sweet and womanly as she looks. Her generosity is the despair of her secretary, as, entirely regardless of the state of her balance, she insists on giving handsomely to any suddenly arising case of public charity.

This Christmas she had a large number of nightdress cases made from the clippings, and these were sent around Christmas to her women friends.

Queen Alexandra was born December 1, 1844.

## SAUSAGE AS A DELICACY

Method of Preparation Has Much to Do With Its Appreciation When Put on the Table.

Sausage, considered by some as a plebeian edible, rankles with Irish stew and corn beef and cabbage, and not possible on the ultra-refined board, may really be made the basis of many delicious and even dainty luncheon dishes.

Sausage sliced and delicately fried in its own grease, drained and then browned crisply, and served with tiny little buckwheat cakes four inches across, will make a delightful luncheon on a cold winter day.

Sausage smothered in potato is another luncheon dainty, which even the most cultured need not disdain.

Parboil some very small link sausage five minutes. Bake a number of medium sized potatoes, and when done cut in half and remove the meaty pulp, mashing it well and adding butter and a little cream or milk, as well as some salt and pepper. Fill the potato skins with this mixture, leaving a depression in the center of each. Lay in the parboiled sausages and brown well in the oven for a few minutes.

PLUM PUDDING ICE CREAM

Change From the Usual Method of Serving Will Be Appreciated by All the Family.

A novel change from the usual plum pudding is this delightful dessert, which is quite easily made:

Scald a pint of milk, add to it four eggs beaten with one cupful and a half of sugar. Stir constantly over hot water until it forms a rich custard; strain and set aside to cool.

Dissolve two tablespoonfuls of cocoa in one-half cupful of boiling water and boil for a moment. Chill this and add to the cold custard with one tablespoonful of vanilla and one pint of cream. Shred sufficient citron to measure one-half cupful; steam one-half cupful of seeded raisins and one-quarter cupful of sultanas until plump and tender. Blanch and cut fine two dozen almonds; mix these, add just enough sherry to moisten, and let stand for an hour. Pour the mixed cream into the freezer and freeze until like a thick mass. Open, and work in the fruit, then finish freezing. In serving, garnish with whipped cream.

Sauce for Chops.

Pound fine an ounce of black pepper and half an ounce of allspice, with an ounce of salt, and a half ounce of scraped horseradish and the same of shallots peeled and quartered; put these ingredients into a pint of mushroom ketchup or walnut pickle; let them steep for a fortnight and then strain it. A teaspoonful or two of this is generally an acceptable addition, mixed with the gravy usually sent up for chops and steaks; or added to thick melted butter.

Another delightful sauce for chops is made by taking two winglasses of port and two of walnut pickle; four of mushroom ketchup; half a dozen anchovies pounded; and a like number of shallots sliced and pounded; a table-spoonful of soy and half a drachm of Cayenne pepper; let them simmer gently for ten minutes; then strain, and when cold put into bottles, well corked and sealed over. It will keep for a considerable time.

Old German Salad Recipe.

Here is an old German recipe for a salad that is delicious for Sunday night supper when sweet things fall. Finely chopped, it is also an excellent filling for sandwiches. Soak any desired quantity of salt sardines in water for several hours. Sardines put up in oil may be used instead of the soaked sardines. Line a salad bowl with lettuce leaves and shrimps or crab meat. Garnish with parsley and slices of lemon and pour over the whole a heavy French dressing.

Apple Sponge.

Cover one-half box of gelatin with cold water and allow it to stand for half an hour; then pour over it half a pint of boiling water and stir until dissolved. Mix a pint of strained apple sauce with the gelatin, add a pound of sugar and stir until it melts, and the juice of two lemons. Set on ice until it begins to thicken. Beat the whites of three eggs to a stiff froth, stir into the apple mixture and pour into a mold. Serve with whipped cream.

Spanish Pork Chops.

Put two pounds of pork chops into a baking pan with a cupful of hot water. Place in a hot oven and bake one-half hour, basting often. Then take out, sprinkle with salt and pepper and cover with one pound of onions, sliced thin. Bake 15 minutes, then cover with one-half can of tomatoes and bake again for 20 minutes. Put meat and vegetables on heated platter, pour gravy around meat and serve at once.

Useful Chestnuts.

Try adding chopped cooked chestnuts to chicken salad, either in place of celery or in addition to it. They give a delicious flavor and consistency to the salad. They also can be added to potato salad, which, by the way, is always better for the addition of some other ingredient.

Mince sweet green peppers or chopped celery keep potato salad from a certain heaviness that it sometimes has.

Chocolate Dipping.

Get the soluble sweet chocolate used by confectioners. Melt it in a deep bowl over hot water. If you cannot get the sweetest white, adding a little cooked fondant. When melted dip the bonbons with small tined forks or candy tongs. Let superfluous coating drip off, then lay on waxed paper to dry. A few drops of olive oil or glycerin will give gloss to the chocolate.

Filling Lamps.

An oil lamp should be filled only within about an inch of the top, as the oil will expand slightly when the wick is lighted.

He Remembered.

Bill—"Do you remember the day you put your first dollar in the bank?" Jill—"Oh, yes."

"When was it?" "The day before I drew it out."

Couldn't Supply Dawn.

Ah! The audience held their breath and simply thr-rilled as Bravado Jack, the hero, killed the last of the Indians. He staggered about, he almost fainted with the loss of blood. Then he gazed about him, and suddenly his voice rang out with hope. "See!" he cried. "The dawn breaks bright upon my topmost heights!" The stage remained in almost total darkness. "See!" he yelled again. "The dawn breaks bright upon my topmost heights!" Still darkness reigned. "The dawn! The dawn!" he screamed, raging about the stage. "It breaks! The dawn!" A head popped over the mountain top. "Old 'ard, guv'nor!" said the head. "Don't be in such a desprate 'urry! Some one's bin 'n switched the 'lectricity off!"

reigned. "The dawn! The dawn!" he screamed, raging about the stage. "It breaks! The dawn!" A head popped over the mountain top. "Old 'ard, guv'nor!" said the head. "Don't be in such a desprate 'urry! Some one's bin 'n switched the 'lectricity off!"

## WEST HAS OLD CITY

Acoma, New Mexico, Said to Be Centuries Old.

It Was in Full Bloom in 1542; Has Three-Story Houses, Outside Stairways and Streets a Hundred Feet Wide.

Acoma, the Pueblo Indian city, down in New Mexico, is claimed to be the oldest city in the western hemisphere. It was in full bloom when Coronado, in 1542, came across it on an exploring tour northward from Mexico. He found the Pueblo Indians doing then what they are doing today and doing it in the same fashion, and the houses on the rocky islands that rise several hundred feet out of the plains are the same houses that Coronado's eye rested on as he came on the Indian city.

St. Augustine, which is often referred to as the oldest city in the United States, was not discovered until 1655, when Menendez came on Florida while chasing a French ship under Rebut. Years before Coronado found it, Acoma was a recognized abode of the Pueblo Indians. The Pueblos told Coronado that their first city was on Katzimo, the rocky island three miles away, which is also called the "Enchanted Mesa." Many years ago, they told the Spanish explorer, the original Acoma rested on the top of Katzimo.

One day, while all but three women were in the plains below the tableland, a great cliff fell, destroying the trail from the plains to the ancient city. The Indians took this as an indication of the great spirit's displeasure over something they had done and to punish them had cut off the path to the city. Instead of clearing the path and returning to their old homes on top of Katzimo, the Pueblos went to the adjoining tableland and there set up the present city of Acoma, the same city that Coronado visited in 1542.

The Pueblos look at the old city on its rock site nearly 400 feet in the air as a sacred place, and woe to the person caught trying to penetrate its precincts.

The present city of Acoma is on a plateau that rises 350 feet out of the arid plains of New Mexico. The sides of the plateau, a mass of brown sandstone, are almost straight. To get to the top one must climb a crude stairway cut in the stone. On top one will find three or four rows of primitive apartment houses. These houses are three stories high and are built on each side of streets 1,000 feet long. The houses follow a line that seems even straighter than the building line in big cities, since the houses are all of the same type of architecture and are built up close to the line. The streets, too, are 100 feet wide, which may be another feature that modern city builders may have copied from the red men of the southwest.

One may be sure that the Pueblos did not get the idea of broad streets and building lines from the white men's cities, for 100 foot streets and building lines were laid down years and years before pale faces came across the ocean. These things were a part of Acoma when Coronado called on the Pueblos in 1542. Another feature of this quaint city is that the houses have flat roofs. The upper floors are reached by outside stairways in the shape of ladders. The first floor is the longest. The second floor is ten feet shorter than the first and the third floor is ten feet shorter than the second. This ten feet serves as yards for each of the apartments. In summer the Indian and his family use this yard for sleeping. In winter he sleeps indoors.

Houses are built of mud, ordinary New Mexico mud, shaped into blocks and baked hard. After centuries under the fierce rays of the sun the blocks get as hard as stone. The walls are seamless. After the blocks were placed the Indian builders smeared the joints with mud, which in time became part of the blocks. The walls of most of the houses are eight feet thick. In the early days they were often attacked by the warring Indians of the southwest, as they knew that the Pueblo city was always well stocked with foodstuff.

In the city is a cathedral 40 feet wide and 40 feet high. It has two towers, in which swing bells. The cathedral is built of mud just as the other houses in the settlement. The roof is supported by rafters that would serve as masts in big sailing ships. These rafters the Indians pulled 20 miles across the plains from the San Mateo mountains.

Where East Met West.

In Mr. Headland's book, "China's New Day," he tells a story of the Chinese General Ma, that has bearings on the problems of woman's rights, and incidentally shows that under diverse civilizations human nature remains pretty constant.

The general was calling on one of the older missionaries. During the conversation he said: "Doctor S, I want to ask you a question. In your honorable country, is the woman the head of the home, or is the man the head of the home?" "Why, missionary, it is this way," replied the general. "If the man is a stronger character than the woman, he is the head of the home, but if the woman is stronger than the man, she rules."

The general pushed back his chair, and said, with a smile, "In my miserable country it is exactly the same!"

Carlyle's Brevity.

How often have we seen some such adventurous and perhaps much-censured wanderer light on some outlying neglected, yet vitally momentous province, the hidden treasures of which he first discovered, and kept proclaiming till the general eye and effort were directed thither, and the contest completed—thereby, in these his seemingly so aimless rambles, planting new standards, founding new habitable colonies, in the immeasurable circumambient realm of Nothingness and Night?—Carlyle

Old Parish Cage.

The Essex (England) town of Witham is about to lose its parish cage, which has stood in the High street for nearly five centuries. It is built of solid oak, and in former years was used for housing prisoners. It was used up to about eighty years ago. Prisoners were not allowed beer, but the friends of prisoners made a small crack in the oak wall, the stem of a clay pipe was passed through, and the prisoner sucking the ale through the stem.—Evening News

Human Family Assume About the Same Postures.

"Oh, sleep! It is a gentle thing beloved from pole to pole." Removed from their context, these lines of Samuel Taylor Coleridge present but a bald statement of fact. Thus isolated, however, they best serve my present purpose, which is to bring together a number of other isolated facts about sleep which are not perhaps commonly known, says a writer in the Illustrated London News.

Sleep is indeed a "gentle thing." It is the supreme form of rest. Our notions of rest during sleep, however, are likely to be a little upset when we come to survey the various postures assumed by different animals during sleep.

To begin with the human race. The majority of mankind, probably, sleep lying upon the right or left side of the body, and with the knees drawn up toward the chin. But certain African tribes, for example, lie upon the back, with the head, or rather, the back of the neck, resting on a bar of wood supported on two short pillars. The elephant apparently invariably and the horse commonly sleep standing. This is really astonishing. Apart from the apparent difficulty of maintaining the balance of the body during these long periods of unconsciousness, one would have supposed that a recumbent posture in the case of both these animals was imperative. Cattle and their kin commonly sleep lying down, and during many hours of the day they lie down, as when chewing the cud.

More curious still, there are creatures which invariably sleep hanging head downward, suspended by their hind feet. The bats afford a case in point. Among the birds, we meet with the same strange habit in the little hanging parrots of India and the Malayan region. In this they differ from all other birds, which invariably sleep with the head turned tailward over the back and the beak thrust in among the feathers between the wing and the body, not under the wing, as is commonly believed. No explanation has ever been offered to account for this strange habit. It is followed even by the penguins, wherein the feathers are so short as to fall to completely cover even the beak. Owls are perhaps the only exception to the rule.

And, by the way, the only other animals which thus turn the head backward after this fashion during sleep are certain peculiar tortoises known as "side-necked tortoises." Certain birds sleep while resting only on one leg. This curious pose is well seen in long-legged birds like storks and gulls. They generally sleep on open water. And to avoid drifting shoreward and, therefore, into the danger zone, they keep constantly paddling with one foot, so that the body is always circling round the chosen sleeping area. The sloths sleep suspended by their feet, and the head tucked in between the fore legs. The no less remarkable African potos, or slow lemurs, assume a similar pose, but they attach themselves to a verdict instead of a horizontal bough, so that the body rests with the head upward. No animal, save man, sleeps upon its back.

Some animals are said never to sleep, and this because the eyes are never closed. The hares, snakes and fishes are commonly supposed to enjoy this unenviable distinction. The notion is, however, quite erroneous. Whales and their kin are often quoted as sleepless creatures. It is supposed that if they made this mistake they would promptly drown! As a rule, darkness induces sleep. With many animals, however, the reverse is the case, as with the bats and owls, for example. This reversal of the usual order has been brought about by the nature of the feeding habits.

Finally one comes to the question: Where does sleep begin? This is by no means easily answered. One is inclined to draw the line at the insects. But since all living things, plants as well as animals, display periodical states of quiescence, perhaps we shall be nearer the truth in regarding sleep as universal among living things. In the case of plants it is enforced by darkness, save in the case of many bacteria and fungi, which, like eelweeds, grow under the cover of darkness.

## WAYS OF SLEEPING

Human Family Assume About the Same Postures.

Odd Positions of Other Animals—Elephants and Horses Slumber While Standing, and Some Brutes Appear Sleepless.

"Oh, sleep! It is a gentle thing beloved from pole to pole." Removed from their context, these lines of Samuel Taylor Coleridge present but a bald statement of fact. Thus isolated,