Chinch Bugs in Corn Fields. The following letter from Prof. Forbes gives some additional light on the very important question of chinch

bugs in corn fields:

After the chinch bugs have dispersed themselves generally in the corn fields little or nothing remains to be done to defend the crop against their attack that year; but while they are on their way from small grain or corn, or while they are entering corn fields and before they have distributed themselves widely, it is not difficult to arrest them en route and to kill them in great numbers. For this purpose plow deep and thoroughly pulverize with harrow, brush or drag, a strip of ground about six to twelve feet wide between the crop or part of the crop infested and that which is to be protected. Reduce this strip as nearly as possible to the condition of dust, and then make a deep furrow in it by dragging back and forth a small log six or eight inches in diameter, or a triangular loaded trough made by nailing two boards together lengthwise and filling with stones. This drag should be drawn back and forth by horses with the driver standing on it, the object being to make a deep furrow with steep dusty sides across the line of movement of the chinch bugs. Next dig holes about a foot in depth with a post-hole digger, in the bottom of this furrow, at intervals of, say, twenty feet Chinch bugs making their way into the corn will march or tumble into this furrow, and will be unable to get out again on the opposite side as long as that is kept dusty. As a consequence, they will gradually accumulate in the post holes, where they may be very readily killed in large numbers by pouring in a little coal tar; or the tar may be placed in the holes at first, so as to destroy them as they fall in. If the sun is very hot, large numbers of them will be killed in the furrow itself. It will be necessary for some one to keep watch this barrier, so that as the chinch bugs gradually work down the dust in their efforts to climb out, any part of the furrow from which they are liable to escape may be trimmed by hand. On leaving the field at evening everything should be looked over and put in the best condition, so that there may be no passage of the bugs in the night; and some one should also take the field very early in the morning. Sometimes, where they are very abundant, a second furrow parallel to the first may be necessary. This arrangement will serve the purpose completefarmer must be prepared with a barrel of coal tar, a slender line of which he should then pour from a vessel with a small spout along the bottom of the furrow its whole length to serve as a stop to chinch bugs after the dusty sides of the furrow are wet. This also must be watched and renewed as necessary. When first put on the coal tar will sink into the ground quite readily, but as it dries out a crust will form upon which fresh tar will lie for some hours without sinking in. Even after it is well dried out chinch bugs avoid it and will not cross it if they can help themselves. Kindly give these instructions to any especially interested in the matter, as we have thoroughly experimented with this method and have found it, if carefully followed up, a most effective one for the destruction of chinch bugs in midsummer. The introduction of contagious disease by means of infected specimens is an uncertain and mewhat delicate operation, liable to fail through oversight or mismanagement even when all the circumstances favor it, and practically certain to fail absolutely in very dry weather. Its utility has often been enormously overstated, largely, I think, as a consequence of mistakes of observation. which those not thoroughly acquainted with the life history and habits of the chinch bug are especially liable. It will, of course, do no harm to try this method, but I most urgently advise that it be regarded at most as an interesting experiment, and that no practical dependence be

placed upon it at present. S. A. FORBES. Illinois State Entomologist.

Influence of Feeds on Manure. A bulletin of the Mississippi station

Stable manure is undoubtedly the best fertilizer we have for general use, as it contains all the elements needed for plant growth in a condition in which they soon become available; and, in addition, its principle bulk is composed of humus-making material which is needed for all excepting very fresh or alluvial soils. Although stable manure is regarded as a "complete" fertilizer, and is a standard with which others are compared, it is of very variable composi-tion, its value being determined by the animals from which it comes, their food, age and condition, the amount of straw and bedding which has been mixed with the droppings, whether it has been sheltered or exposed to leaching rains, the length of time since it was made and by many other causes. An increase in the amount of cotton seed meal fed to the animals is very quickly followed by a corresponding increase in the amount of nitrogen in the manure, wheat bran gives a marked increase in the phosphoric acid, while there are few feeds hich give a manure richer in potash than does clover hay. In some recent experiments made at the New York (Cornell) station the value of the manure from cows fed on different ra-tions varied from \$1.76 to \$2.47 per ton, and from \$1.69 with calves to 84.17 with sheep. These figures give the results of work done where the ration was rich in grain, and where nearly all the urine was saved by using water-tight floors or a sufficient amount of bedding. Had the urine

been allowed to waste the value of the manure would have been much less, as large proportions of both potash and nitrogen are excreted in the

The fertilizing values of some of the more common feeding stuffs, as given in the "Experiment Station Hand-Book" per ton are as follows:

Potash. Phosphor-Nitro-Total. ic Acid. gen. 5.94 Wheat bran . 1.61 Rice bran24 Cotton seed meal 1.79 19.92

It should be borne in mind that the figures given above represent the nominal fertilizing values of the different feeds, and are far from showing their actual values when used in the field. Under good barn management not more than 80 per cent of the fertilizing value of food given to stock is recovered in the manure, and when the urine is allowed to waste not more than 50 or 60 per cent is recovered. There is a still further loss from the fact that fields seldom need the different fertilizing elements in the exact proportions in which they are found in the manure, and so a portion of such as are in excess of the amounts needed will not be consumed. To balance this loss, however, there is a positive gain in the humus-making material which has not been counted in the estimated value, and for clay soils which have been in cultivation for a long time the humus is often of greater value than the combined potash, phosphoric acid and nitrogen. The actual value of stable manure will vary with every variation of the field to which it is applied.

Pruning Raspberries. A Cornell bulletin says: Growers are in general pretty well agreed as to the method of pruning black-caps. One point, however, needs to be emphasized, that the young shoots should be nipped back low, and when they reach the desired height, not allowing them to get considerably higher and then cutting back to the height required. If pinched low, the plant will all at once throw out strong and vigorous branches near the ground, making a well-balanced self-supporting bush. On the other hand, if it is allowed to grow higher and is then cut back, only weak buds are left, and the result is that they do not develop so rapidly and only three or four of the upper ones start at all, producing a top-heavy and unsatisfactory plant. Sheep shears are very convenient for this summer pruning, or it may be quickly done by merely pinching out the tip with the thumb and finger. To determine whether the manner of doing this would make any difference, two sections of row were marked and in one case the canes were all cut with shears, taking care that the cut should be in a slanting direction so that water would run off readily. In the other case the canes were snapped off by bending them quickly with the thumb and finger, leaving an irregular, ragged end. The canes had grown too high, so that rather more was removed in both used for cooking purposes in place of lard, but its sphere was very soon best practice. An examination the following spring showed no perception oil was soon discovered, and it would ble difference in the condition in which | be hard to tell in how many ways it the two lots came through the winter. The cane nearly always died back to the first bud in either case, so that while theoretically a smooth, slanting cut would seem to be best, practically it does not matter.

Elements In Fertilization. IIt is commonly said that a "complete" fertilizer need contain only the three mineral elements which are usually deficient in the soil, viz: potash, phosphoric acid and nitrogen. Practically, however, we find that though a soil may be rich in each of the elements which go to make up the plant, it is impossible to secure good. or even fair crops, unless it contains, in addition to these, a liberal supply of humus, which is formed whenever vegetable matter decays in the soil, and it is in the formation of this material that the practice of plowing under green crops has its greatest value. It is plentiful in all fresh soils, but becomes exhausted by continued cultivation in hoed crops, especially in the hill lands and the supply must be renewed before chemical fertilizers can be used to advantage. It is the necessary foundation of all fertility, and without it the use any commercial fertilizer is sure to disappointing. If the fertilizers used do not contain humus-making material it must, sooner or later, be supplied by the plowing under of

FRESH BLOOD.-An expert in the poultry business advises that in order to have plenty of fresh eggs fresh blood should be introduced into the flocks every year. Get as good blood as possible to introduce, but even a mongrel bird will help the high-bred birds better than none at all. In fact, sometimes the mongrel bird will bring points of hardiness and endurance into the flocks that can not be obtained from those that have been so carefully reared for generations past. The rooster should be obtained from good stock, and very often of a different breed from the hens, and if a new one is obtained each season enough fresh blood will be brought into the flock to make the standard of the birds high. There is little chance of deterioration, and more eggs will be obtained from them than from a flock that has been closely inbred for years.

green crops, or by turning the land

out to rest.-Farmers' Review.

MOUSE AND LION IN ONE CAGE. They Scared Each Other in Turn Until

the Little Animal Escape !. One day a keeper wishing to test the affection popularly supposed to exist between a mouse and a lion put a mouse in the cage of a full-grown Nubian lion, says McClure's Magazine. The lion saw the mouse before he was fairly through the bars. and was after him instantly. Away went the little fellow, scurrying across the floor and squeaking in fright. When he had gone about ten feet the lion sprang. lighting a little in front of him. The mouse turned, and the lion sprang again. This was repeated several times, the mouse traversing a shorter distance after each spring of the lion. It was demonstrated that the lion is too quick for the mouse, at least in a large cage. Finally the mouse stood still, squealing and trembling. The lion stood over, studying him with interest. Presently he shot out his big paw and brought it down directly on the mouse, but so gently that the mouse was not injured in the least. though held fast between the claws. Then the tion played with him in the most extraordinary way, now lifting his paw and letting the mouse run a few inches, then stopping him again as before. Suddenly the mouse changed his tactics and, instead of running when the lion lifted his paw. sprang into the air straight at the lion's head. The lion, terrified, gave a great leap back, striking the bars with all his weight and shaking the whole floor. Then he opened his great jaws and roared and roared again, while the little mouse still squealing, made his escape. Of the two the mouse was the more frightened. It is a fact well known in all manageries that a mouse will frighten an elephant, more than a locomotive. Let one appear in an elephant's stall and the elephant, his mountain of flesh quivering, his trunk lashing the air, will trumpet in abject teror; and he will not recover for an hour afterward. The trainers say that what the elephant fears is that the mouse will run up his trunk. There is a tradition that a mouse really did this in one instance while the elephant was sleeping and caused the elephant such intense pain that he had to be killed.

COTTONSEED OIL.

The Many Uses to Which This Valuable Product Is Now Put. "It is astonishing to what a multitude of uses cottonseed oil is now put, and how enormously the demand for it has grown, and that makes it surprising that the merits of the oil were not discovered sooner;" said C. J. Johnson, of Atlanta, to the Globe-Democrat man. "For centuries this important part of the cotton crop (the seed), except what was used for planting, was either thrown away as waste, used for enriching the soil or fed to eattle. Only of late years was the mercantile value of the oil discovered. It developed very rapidly. In two or three years mills for crushing the seed and rendering the oil sprang up all over the South, and the new industry increased, until now I believe the cotton seed oil trust is second only to the Standard oil trust in capital and magnitude of its operations. At first the product was modestly is used now. There is a large market for the seed after the oil is extracted, too. It is sold in the shape of cotton seed oil cake and meal for cattle food. The oil has become an article of great commercial import-ance, and it is shipped to Europe in large quantities. A movement is on foot to export it in bulk like petroleum. The first vessel has recently been launched, built for the pur-

oil company." long and Narrow Maine Farms. Maine probab'y has many oddly shaped farms, but we doubt if one can be found more peculiar in form than that in the east part of Dexter. This was eight rols wide and half a mile long, with the highway cutting it at right angles into unequal portions. The inconvenience of so narrow a farm, with the pasturage and woodland at one end, is obvious to anyone, but in its form it has continued since the days of the forefathers to the present time, in use as a farm all the time. A farm only twenty rods wide and about half a mile long was in use a great many years near Farmington Fa'ls, and may be so used yet. but the Dexter farm beats it by nearly two-thirds for narrowness and general oddity. Farms of this shape are numerous in Canada -Lewiston Journal.

pose. It has a capacity for 500,000

gallons of oil, besides other cargo.

It is built of steel. It is almost

superfluous to add that it is in the

service of the American cotton seed

Judicia Sarcasm. The sarcastic Justice Maule did not spare his judicial brethren. "I do not believe," he said to the counsel once, "that any such absurd law has ever been laid down, although it is true that I have not yet seen the last number of the 'Queen's Bench Reports.'" When a witness was telling an impossible story, and declared that he could not tell a lie, for he had been wedded to truth from his infancy, Justice Maule observed: "Yes, but the question is, how long have you been a widower?" The counsel who objected to a bill of costs in a case before Justice Maule and a jury, declared that the account was a "diabolical bill." The judge toli the jury, however, that even if the statement of counsel were true, it was still their duty to "give the tevil his due."-Argonaut.

WORLD'S MARKETS

OLD DEMOCRATIC ARGUMENT COMPLETELY EXPOSED.

The American Market Worth Over Four Billion Dollars a Year More Than All Others Combined-Let U. Keep Our Own and Not Destroy It.

The renewal of the free trade party's destructive free raw material war ery against American industries naturally calls to mind their old theory of the markets of the world, and how great a gain it will be if we can only secure them Let us look into it.

The total manufactures of the

United States in 1890, according to the last census returns, amounted in value to \$9,054,435, 537, of which we exported to the value of \$151, 102, 376, leaving \$3,903,332,961 worth of American manufactured goods consumed at home, as follows:

AMERICAN MANUFACTURES.

Total home consumption, 1890.. \$8.933,332,961 In the same way we must deal with our farm products, the total value of which during 1889, consumed in 1890, was \$2,460,107,454. We exported to the extent of \$532,141,490, leaving American farm products worth \$1,927,-965,964 consumed by Americans. Thus: AMERICAN FARM PRODUCTS.

Total farm products, 1889 82,463,107,454 Total exported, 1889............... 532,141,493

Total home consumption, 1893. 81,927,965,964 We see that the American people consumed American manufactured goods and farm products in 1890 to the extent of \$10,831,298,925. To this we must add the value of the foreign goods entered for consumption through our customs department, which amounted to \$773, 674, 812 in 1890, thereby getting the following aggregate value of the entire

AMERICAN CONSUMPTION IN 1890
 American manufactures.
 \$8,903 332,911

 American farm products.
 1,927 955,984

 Foreign goods.
 773,774 812

Total American consumption \$11.601,973,737 Against the aggregate consumption of goods in the United States, worth \$11,604,973,737 in the year 1890, or \$178.52 for every man, woman and child of a population of 65,000,000 persons, what are the great markets of the world that we may expect to secure?

The markets of the world comprise only such goods as are imported by the different countries of the world, because we can not claim to supply them with what they already manufacture or grow in their own countries, unless they propose free trade, as the democratic party would have us do. They are not so foolish, however. Other countries prefer to retain what they already possess rather an throw away the substance for the shadow. We find from the American Almanac of 1888 that the total imports of all other countries in the world at the latest date for which complete returns are available, were as follows:

TOTAL FOREIGN IMPORTS.

dollars than the total consumption of

United States market excess.. \$4,035,973,737

Will It Be a Total Eclipse?

FARMERS, ATTENTION! See How the Democratic Promises o

1892 Have Been Kept in 1894. In October, 1892, that great demo cratic authority, the Chicago Herald, exhorted its readers to vote for "a

change," and in order to catch the votes of the farmers it used the following bait:

CANO. PRIME WHEAT SL25 "

"Vote for Cleveland and \$1.25 for wheat."-Chicago Herald, 18#2.

In less than two years we have seen many "changes" that have become only too painfully familiar to the people of the United States. It is unnecessary to dwell upon these beyond drawing the attention of the farmer to the manner in which the Chicago

has been fulfilled. This we do by quoting from the Chicago Herald of July 6 1894, a telegram which it published as follows, grammar and all:



July 5.-Wheat VANDALIA, Ill., threshing is in full blast in Fayette county. Six hundred bushels of the new crop was brought to market today and sold at 46 cents per bushel. The berry is exceptionally fine, and weighs over sixty pounds to the bushel measure. - Chicago Herald, 1894.

Democratic Respect for Labor.



POPULISTS ARE TO BLAME.

They Vote With the Free Wool Party and Against the Wool Growers.

In the event of a tariff bill becoming law with free wool, it is but right that the sheep farmers of this country should know exactly who is to blame for the cheapening or destruction of this branch of their interests. Some western wool men have accused the eastern manufacturers of desiring free wool. This is an entirely mistaken idea.

The records of the senate showed a solid republican vote in favor of putting a duty on wool, and a solid democratic vote in favor of putting wool on the free list. While the populist senators voted for a duty on wool, they are really to blame for wool being put on the free list, because they tied themselves up with the democratic senators in order to act on the income tax. Had the populists stuck by the republican senators there would have been no free wool, no tariff bill passed, and no income tax.

The policy of the free trade party is to throw our American market-worth \$11,604,973,737 in 1890-open to the competition of the farmers and manufacturers of all other nations, while we strive to secure their markets, all f which put together are worth \$4,035,973.737 less than our own home market.

Is it not best to retain the good home market that we already possess, also striving to cease buying the 8773,674,-812 worth of foreign goods that we consume and to produce these goods for ourselves, if we can, rather than to throw away what we are sure of and take chances in securing a portion of the smaller markets of the rest of the world in open competition with the cheap labor of Europe, of Asia, of Africa, of Canada, of Central and South America, and of the savage labor of the Islands of the Sea?

Such is the policy of protection. But the free trade policy is to give our markets to the cheap labor countries and to compete with the cheap labor in their smaller markets. We already consume over four billion dollars' worth of goods more than they can buy from us. Let us keep our own trade first. Always vote for protection.

The western wool growers should understand clearly that the only party to blame for free wool is the populist party of the house and senate, and the populists represent the wool-growing sections of the country. Perhaps the populists think they will acquit themselves from any blame in their actions by voting against free wool, but if the farmers can see a hole through a fivefoot door they will readily see that the Populists tied themselves up to the democrats, and it would have been utterly and absolutely impossible for the democrats to pass a tariff bill without their vote. Tnat would have left wool with 11 cents per pound duty as it had been heretofore.

That the democratic platform went all to splinters we know full well. They have acted very viciously toward the wool men, especially when they put a duty of 15 per cent on old rags and shoddy, and placed scoured wool on the free list. Out of ninetynine woolen manufacturers in the state of Rhode Island there are only three that can be counted as free wool men, and there is not one in Massachusetts. It is not the eastern manufacturer who is to blame for free wool, but the populist senators.

At Coney Island. Adams-It is astonishing. Brown-What is astonishing? "That there should be so much water."

"Yes, and just think, you only see Herald's promise of \$1.25 for wheat | the water that is floating on top."

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