來。而在中國的教育的教育教育教育教育教育教育教育教育教育教育教育教育教育教育 Vaccine Virus=-Its Preparation and Its Use. 

ARIOLA or smallpox is said | the virus is received after it has been to have found its way into

Europe in the seventh century, and to have been almost continuously present since. It was a permanent pingue, against which no was safe. The prevalence of the evil led English physicians to adopt the practice of inoculation with smallpox in 1721, but it was soon recognized that, although the individual thus treated usually suffered only a mild illness and escaped another attack of smallpox, the practice not only falled to reduce, but even multiplied the sources of contagion, and thus indirectly increased the number of deaths

About 1768 a woman said in the hearing of Edward Jenner: "I cannot take that disease, for I have had cowpox." It was a belief which, although common enough at the time, was held most medical men to be based upon an Imperfect induction from the facts. But Jenner, being a man of discernment and reflection, began a series of observations, and at last of actual experiment. On May 14, 1796, he inocu-lated an eight-year-old boy with mat-ter taken from a vesicle in the hand of a dairymaid smitten with cowpox. So perfect was this vaccination that the boy was inoculated with smallpox



**GRINDING AND EMULSIFYING THE PULP.** 

on the first of the following July without taking the disease. Two years later (1798) Jenner published his famous work, "An Enquiry Into the Causes and Effects of Variola Vac cinae." In the following year vaccination was introduced in the London Smallpox Hospital, and in 1800 the was begun in this country through the efforts of Dr. Benjamin Waterhouse, of Cambridge, Mass,

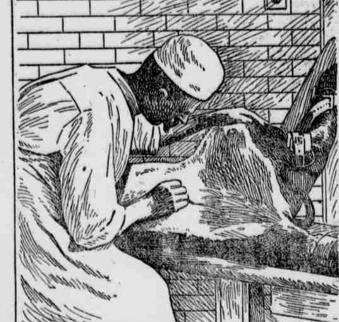
In the early part of the century vac cination was effected almost entirely from arm to arm-a method which is largely followed in London to this very day. But toward the middle of century vaccine virus obtained directly from an animal began to be used in Italy. Although first regarded as the whim of an Italian physician, the custom of vaccinating with animal virus spread rapidly throughout Eu-rope and the United States In most European and a few American cities there have now been installed laboratories for the preparation and distribution of bovine virus. Many of the 'American laboratories have been patterned after the vaccine inboratories of the Health Department of New

collected in the operating-room. The stable contains fourteen calfstalls, having iron posts and side guards, revolving stanchions and re-movable flooring. The operating-room resembles a hospital operating-room; it has a cement floor, enameled brick walls, and contains merely the operating furniture, a special table, enameled stools, wash-basins and tables for instruments.

The preparing-rooms are provided with hydraulle pumps, each connected with two metal pipes used respectively for suction and blast. The free ends of these pipes are distributed along narrow benches at which the virus is drawn into capillary tubes, and the tubes hermetically sealed.

him is a small mill comprising four glass rollers superposed in pairs, geared together and turned by a crank, and upon the rollers sixty per cent. glycerine in water is allowed to drop from a burette such as every chemist uses in volumetric analysis. As it is ground in the mill the pulp is emulsified in the glycerine. The hard pulp collects on a scraper and is returned by the grinder to the top rollers in order to be re-ground and further subjected to the action of the glycer-ine. The glycerinated virus from each calf is clinically tested in three insertions on each of five or more previously unvaccinated children. As a general rule 100 per cent. Insertion success is secured. During the tests, which extend over many days, the glycerinated virus is stored in large, hermeticallyscaled tubes, properly labeled to in-sure identification. If the results are favorable these tubes are taken to the preparing-room and emptied into small conical cups. From these cups the

virus is drawn up into small capillary glass tubes, each tube containing enough virus for one vaccination. The



SCARIFYING A SHAVEN HEIFER

ends of the tubes are then hermeti-A calf before it is admitted to the cally sealed with a blow-pipe. From the preparing-room the filled

charged, the wooden holder is slipped

in an envelope on which directions for

using the virus and the simple instru-

ments by which it is accompanied are

printed. According to these direc-

tions the surface of the skin is to be

scarified with the needle, the ends of

the capillary tube are to be broken

off, the small rubber is to be slipped

over one broken end, and the virus is

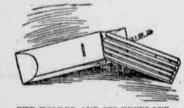
to be blown upon the wooden spade and thoroughly rubbed into the scari-

fication. These printed envelopes and

their wooden holders are distributed

stable is weighed, and its skin care-fully examined. The body is curried and brushed; the feet are washed and and tested capillary tubes are taken to scraped, and the hair is clipped from a packing-room, where each tube is the tall. While at the laboratory the inserted in one of the four grooves of calf is fed exclusively on milk. Its a wooden holder shown in one of the condition is noted each day on a card illustrations. The other three grooves hung beside its stall. receive respectively a little rubber Placed beneath a window in the statube, a needle and a small wooden spade resembling a toothpick. Thus

ble is a table of suitable form to which the calf is securely strapped. The posterior abdomen and inside of the



THE HOLDER AND ITS ENVELOPE.

by the Health Department to its vathighs are washed with hot water and shaved-the first step in the preparation of vaccine. From the stable the calf is led to the operating-room and strapped on the operating-table. The shaved abdomen and thighs are again washed and then scarified with superficial linear incisions made with

Our Faulty Political System. We have found that even among ourselves our historic methods are not universally convenient or serviceable, says Prof. Woodrow Wilson in the March Atlantic. They give us un-trained officials, and an expert civil service is almost unknown among ms. They give us petty officials, petty men of no ambition, without hope or fitness for advancement. They give us so many elective offices that even the most conscientious voters have neither the time nor the opportunity to inform themselves with regard to every candidate on their ballots, and to inform memselves with regard to every candidate on their ballots, and must vote for a great many men of whom they know nothing. They give us, consequently, the local machine and the local boss; and where popu-lation crowds interests compete, work moves strenuously and at haste, life is many-sided and without unity, and voters of every blood and environ-ment and social derivation mix and stare at each other at the same vot-ing places, government miscarries, is confused, irresponsible, unintelligent, wasteful and of sinister aspect.

Our Faulty Political System.

Methods of electoral choice and ad-ministrative organization which served us admirably well while the Nation was homogeneous and rural serve us oftentimes ill enough now that the Nation is heterogenous and crowded into citles

# Foreigners Own No Land in Shanghai.

The government of Shanghal itself as a municipality, is as oddly compli-cated and as full of apparent contradictions as the prerogatives and juris-distion of the consular court. The foreign settlement is built upon lands held, under treaty, by a perpetual lease from the Imperial Government; not one foot of it is actually owned by the foreign residents. The holdings of Western Powers in China, with the exception of the Russlans at Port Ar thur, are precisely of the same nature; the land upon which they have built barracks, residences and warehouses has all been granted subject to the same condition, each and all paying a perpetual and stipulated tax to the Imperial Government-Chautuaouan

Mores the bowels each day. In order to be healthy this is necessary. Acts gently on the liver and kidneys. Cures sick headache. Price 25 and 50 cents.

Submarine boats and torpedoes for use in warfare do not seem to be held in fa-vor by M. de Lanessan, the French Minis-ter of Marine, in spite of the generally supposed predilection of the French for such measure of harbor defense. M. de Lanessan is quoted as saying that neither submarine boat nor torpedo is of great value in war, owing to their limited range of action.

Coughing Leads to Consumption. Kemp's Balsam will stop the cough at once. Go to your druggist to-day and get a sample bottle free. Sold in 25 and 50 cent bottles. Go at once, delays are dangerous.

A recruiting officer who has been in Iowa says that the percentage of men ac-cepted in that State on offering them-selves for army service is considerably above the average in any other State. Enlistments in Iowa are largely from the farms, and the vast majority of young fellows who offer themselves are young, strong and hardy.

## Care of the Baby.

To keep the skin clean is to keep it healthy; every mother should therefore see that her baby is given a daily bath in warm water with lvory Soap. The mirsery should also be well aired and cleaned, and all clothing washed with Ivory Soap, well rinsed and dried in the sun. ELIZA R. PARKET.

When a Chinaman is very swagger he becomes possessor of a cheap American clock. These alarm clocks have found their way into every city and town in the empire. There is nothing the Celestial is so proud of as his alarm clock. If you take up a dozen photographs of Chinese you will see that they always have the lit-tle clock on the table at their elbow.

When feeling tired, discouraged and gen-srally "used-up," take Garfield Headache Powders; they are made from Herbs and are genninely good. Send to Garfield Tea Com-pany, Brooklyn, N. Y., for free samples.

# UNDER THE SNOW. Ghastly Truths Revealed on the Disappearance of Winter's White Mantle.

Deadly dangers lurk in the ground the human body so that it will be-left bare by the departing snow. All come impregnable to the germs of in-Winter long there have been accumu-vading disease.

lating deadly disease germs. These have been protected and kept alive by the covering of snow and now, with the first warm days, these death-bringing microbes are these death-bringing microbes awakened by the rays of the sun, as the ground dries they are carried to all corners of the community in the dust that is blown everywhere by the Spring winds.

The human body at this time is par-The human body at this time is par-ticularly susceptible to these germs, especially the germs of fevers. The system has been depleted by the fore-going Winter. The blood is sluggish and filled with impurities. The nerves have not recovered from the tension they have been under for the past months. The stomach, the bowels, the kidneys, the liver are all at their

worst. It is, therefore, not strange that

It is, therefore, not strange that these germs of disease find fertile ground in which to thrive, flourish and develop into deadly ills. Spring is the time of year when one should fear an attack of fever, espe-cially when the system is depleted.one should dread any severe illness. The vitality is at a low ebb. There is less power of resistance to throw off di-sease and it is on this account that sease, and it is on this account that fatalities are so much greater during the Spring months than at any other

time of the year. There is but one way to ward off such dangers, and that is to fortify New York City.

To do this take Dr. Greene's Net

To do this take Dr. Greene's Ner-vura blood and nerve remedy. It will build you up quickly, it will reestab-lish your waning appetite, it will give you restful nights of sleep, it will give vim and vigor to the nerves, and it will dispel all existing poisons that have accumulated in the body besides counteracting the effects of others that may accumulate. that may accumulate.

Following is an instance that will illustrate the wonderful power of Dr. Greene's Nervura blood and nerve

Greene's Nervura blood and herve remedy. Sheriff Jonas T. Stevens, who is sheriff of Hyde Park, Vt., says:--"I have used Dr. Greene's Nervura blood and nerve remedy especially as a blood purifier. I had a very severe humor on my arms, accompanied by a very bad itching, so severe that I could not shown picture severe inconbad itching, so severe that I could not sleep nights, causing me great incon-venience by the loss of sleep by the itching. A friend advised me to take Dr. Greene's Nervura blood and nerve remedy, which I did with the most satisfactory results, for the trouble has entirely disappeared, and I can now rest comfortably nights and have none of my former misery from the none of my former misery from the burning, itching sensations."

Remember Dr. Greene's advice will be given to any one desiring same ab-solutely free if they will write or call upon him at his office, 35 W. 14th St., New York City





fork. In order to show how vaccing is made it is our purpose to describe in the present article the methods which are followed at this admirably equipped New York laboratory.

Until 1876 arm-to-arm vaccination was usually practiced in New York, the lymph being taken only from a primary vaccination vesicle of a child a been objectionable, in that it is a possible source of infection of a most sepresent vaccine laboratory. This lafloor of which is divided into a stable, | cally called "pulp," are picked off, de

geon's knife-a process which is not painful and entails but slight discomfort. The calf is now ready for inoculation. Into the bleeding incisions made by the knife vaccine (cowpox) virus is carefully smeared with an ivory or metal instrument, after which the calf is returned to the stable. In few months old and only on the eighth day. But human lymph has always ated surface is covered with vesicles. and from these the virus is obtained. alble source of infection of a most city rious blood disease. In 1876 the city Health Department started a vaccine thealth Department of this has grown the cleansed. With a curette, a scoop-On the sixth day the calf is led again like instrument generally used by surboratory at present occupies , three geons for digging out dead bone or story building of brick, the ground morbid matter, the vesicles, techni-



COLLECTING THE PULP WITH THE CURETTE.

posited un a small cup and weighed operating-room, and removed w feet from the table, a pulp-is seated, whose duty it is to the collected matter. Baters in the but a fe



rious supply stations throughout the city and sold for ten cents each .--Scientific American.

### Lived Under Five Monarchs.

How many ladies in English society, says the Onlooker, have lived under five monarchs it is difficult to say without reference books. But old Lady Carew, and Lady Spohla Cecil, the surviving sister of Lady Louise Tighe, have lived in the reigns of George III., George IV., William IV., Victoria and Edward VII. Lady Sophia Cecil has certainly conversed with them all. She is now rather infirm for her daily drive in a four-wheeler, but in her quiet, dignified manner she preserves much of the manner of the old school, and she recollects her old friends even if she has not seen them for years.

# The Successful Men.

When a man wants the public to know that he has something to sell, or services to render, systematic and persistent advertising in the newspapers will do more toward achieving his purpose than any other means of publicity. In every community the most successful merchants are those who use the newspapers. Circulars, dodg-ers, programmes, bill boards and directory schemes are a waste of money.

Strangest Sight at Victoria's Funeral. Many facts of the end of Queen Victoria's reign would have scemed incredible if predicted in its early or incredible if predicted in its early or even its middle years, but few indeed can have dreamed that of all the bat-tieships gathered to do her honor by sea in the great funeral procession, the mightlest ressel of all-the Hat-suse-should be sent by the fleet of Japan.-London Globs, LION COFFEE.

LION COFFEE is not glazed or coated with egg mixtures and chemicals, but is an absolutely pure coffee, full of strength and flavor.

In every package of LION COFFEE you will find a fully illustrated and descriptive list. No housekeeper, in fact, no woman, man, boy or girl will fail to find in the list some article which will contribute to their happiness, comfort and convenience, and which they may have by simply cutting out a certain number of Lion Heads from the wrappers of our one pound scaled packages (which is the only form in which this excellent coffee is sold). WOOLSON SPICE CO., TOLEDO, OHIO.