

VALUE OF VACCINATION.

How the Practice Has Lessened the Ravages of Smallpox.

Statistics Prove Its Efficacy—How the Virus, Humanized and Bovine, is Obtained and How It is Preserved—Protection Afforded by Inoculation.

The world 100 years ago was on the eve of a discovery which was destined to hold in check and modify one of the most persistent and terrible diseases which had affected mankind; namely, smallpox (variole). The origin of this disease is unknown, but it is associated with antiquity is unquestioned. Prior to 1800, the year in which vaccination may be said to have been introduced throughout the world, innumerable measures and remedies had been employed to prevent the ravages of this disease, but all had proved to be impractical or had failed, and the people had accepted the condition as a visitation of Providence.

In order to properly appreciate the devastation caused by smallpox previous to 1800 and the protection afforded by vaccination after this period it will be necessary to refer to the statistics of the time referred to, and for this purpose we have selected some of the records of the English Government, the reliability of which is unquestioned.

THE RECORDS OF THE DISEASE. It is shown by the tables that prior to 1800 the average annual number of deaths from smallpox per 100,000 inhabitants was more than 700, and that after 1800 the average annual number of deaths from smallpox per 100,000 averages about twenty-five or thirty. In the years prior to 1800, when smallpox was very prevalent, about one cent of the population of the entire country were deaths from smallpox.

It is not alone statistics which are dependent upon for indisputable evidence of the value of vaccination. We have the testimony of those who are constantly dealing with smallpox, and who carefully study the effect of vaccination, both upon the individual and upon the community. An experience of fifteen years with this disease, and a close observation of the effect of vaccination have given me proof of the protection afforded by this precaution which is beyond any dispute or argument. This belief is shared by all who have had similar experience.

ORIGIN OF INOCULATION. Of the different remedies and measures already referred to as having been used for the prevention or mitigation of smallpox prior to 1800, one is deserving of notice, I refer to the practice of "inoculation." This was first introduced into England and gained numerous adherents in different countries. It consisted in taking lymph directly from a smallpox vesicle and introducing it into a scarification of the body of the person to be inoculated. This produced a mild form (generally) of smallpox, which was comparatively harmless to the one inoculated, the mortality being about one to three per thousand. Those inoculated were said to have been protected by the "natural pox."

The chief objection to this procedure, and the one which was fatal to its continuance, was the fact that it propagated the disease, and it was gradually abandoned. (It was made unlawful in England by an Act of Parliament.) This condition of things was changed when, about 1770, Edward Jenner, a young medical student of Berkeley, England, was apprenticed to Mr. Ludlow, a surgeon, of Stratford, near Bristol.

Jenner soon learned of a tradition which existed relative to the immunity against smallpox enjoyed by the employees in dairies, whose hands were infected with an eruption caused by milking cows having a number of small "sores" about the teats and udder, and known as "cowpox" (vaccina). Jenner was apparently fascinated with the subject, and being a close observer, studied it whenever an opportunity offered. He patiently and carefully continued his investigation for twenty-five years or more, but his work was frequently retarded owing to the occasional disappearance of cowpox. However, in 1780, having been fully satisfied with the result and value of his discovery, he published a paper entitled "An Inquiry into the Cause and Effects of Variola Vaccina." Previous to this, in April, 1786, he had successfully vaccinated a boy 12 years old, named James Phipps, with lymph taken from a vesicle on the udder of a cow affected with cowpox.

JENNER'S EARLY EXPERIMENTS. So confident was Jenner of the protective power of vaccination that he inoculated the boy with smallpox lymph. This was done in July of the same year, and, as Jenner predicted, nothing followed. He had not at the time undertaken the collection of lymph for future use, and depended on the presence of cowpox for his material; consequently his work was more or less interrupted with, and he probably did not vaccinate in any extent until he again visited London, in 1788.

He then vaccinated a large number successfully. The value of this measure soon became apparent, both to the profession and to the laity, and from this time the news of the discovery was disseminated throughout the world, so that by 1800 vaccination was practiced in almost every part of the globe. It was introduced in the United States in 1800 and in this city in 1801.

The results obtained were in some countries regarded as miraculous, and innumerable honors were showered upon Jenner, who bore them with modesty and without any show or ostentation. Jenner continued his work, principally in London, until the death of his wife, in 1815, when he returned to Berkeley, depressed and broken down. He did not again resume active work, but remained in his native place until his death, in 1823.

The belief of Jenner, and also of those who made the subject of vaccination a study, is not generally understood, particularly as to its power and protection. Jenner did not hold that vaccination was an absolute protection against smallpox, but that its power in this respect was very great, and that it did not prevent the disease it usually rendered it of a mild type.

EXCEPTIONS TO THE RULE. He fully recognized, as do all who understand this subject, that there are a few who are but feebly protected by vaccination. This is rather to be regarded as an idiosyncrasy in certain individuals, and has a parallel in the case of those who sometimes have a second or third attack of smallpox.

third vaccination, however, later in life is advisable, particularly among those who are exposed to small-pox.

SMALLPOX UNCOMMON IN GERMANY. In Germany, where revaccination is compulsory, smallpox is almost unknown. The question naturally arises how and in what manner does the lymph taken from a cowpox vesicle protect a human being against smallpox? It would be out of place and probably uninteresting in a non-medical article to discuss this subject, but at the present day it appears to be fairly well understood, and the facts indicate that cowpox is simply smallpox contracted by the cow.

This theory has received the support of scientific men of all countries, and it is to be concluded, accepting this as true, one fact is certain, that the virus of smallpox in passing through the cow loses its power and reverts to the disease in man or animal, while it retains the power of protection against smallpox. We do not to-day depend on cowpox for the vaccine matter which we need. This was the origin of the supply, but from that time on the virus used has been collected from cows and children, which have been vaccinated one from the other, and the supply may now be said to be inexhaustible.

TWO KINDS OF VIRUS. Vaccine virus is divided into two kinds, humanized virus is lymph taken from the nearby ring which surrounds the vesicle of a successful primary vaccination. From a second vaccination the highest state of perfection between 144 and 165 hours after the vaccination has been performed; at this time punctures are made and the lymph allowed to exude.

If "anti-toxin" vaccination, as practiced in England, is to be performed, the exuded lymph is immediately applied to the scarification on the arms of children who have been presented for vaccination. If the lymph is needed for future use it is collected on ivory points or quills, and preserved in the manner to be described subsequently. Lymph sufficient for fifty to seventy vaccinations is generally collected from one vesicle.

In England, where vaccination is compulsory before the third month, humanized virus is largely depended upon. This work is performed principally by government inspectors, who are assigned to certain districts throughout the country, and vaccination is done with great regularity.

PROPAGATION OF VIRUS. In this country, however, where vaccination is spasmodically and irregularly performed, and generally during the prevalence of the disease, large quantities are needed at short notice; consequently the demand for humanized lymph could not be adequately met. There also exists an uncertainty as to the quality of the vaccine matter, and for these reasons bovine lymph is almost exclusively used in this country. This is furnished by several dairies in the vicinity of the city, and in their efforts to supply the very best form of vaccine matter. Their laboratories and stables are kept scrupulously clean, and the cows are vaccinated in their efforts to supply the very best form of vaccine matter. Their laboratories and stables are kept scrupulously clean, and the cows are vaccinated in their efforts to supply the very best form of vaccine matter.

Carefully selected cows, from two to four years old, which have been pronounced healthy by the veterinary surgeon, are transferred to the vaccine department. They are then made ready for the operation by being carefully fed and cleaned for a certain period. When these preliminaries have been attended to, the animal is prepared for the operation, and is placed in a stall arranged for the purpose, in which it is closed by heavy bars; a bar is also placed close to either side of the animal, who thus penned in is capable of only limited motion.

The quills and ivory points, which are about two or three inches in diameter are then made, and to these abrased surfaces the vaccine matter, which has been prepared in a special manner, is applied. For this purpose very large ivory points known as "spades" are used, and, as would be supposed a very large amount of vaccine matter is used.

COLLECTING THE LYMPH. The cow is now kept under close observation, and after a period ranging between 144 and 165 hours the numerous vesicles which have formed are now detached and ready for collection. It is the long experience in this work which teaches one the exact time that the lymph should be removed.

The lymph is preserved on ivory points and quills and in capillary glass tubes. After the points and quills have been properly sterilized they are placed in glass jars, tightly covered, and placed in a cool, dry place, having a uniform temperature of about 60°. The capillary tubes are also placed in the same jar, and the vaccine matter is used where it is necessary to send vaccine matter to far distant places.

Vaccination is an operation of great importance. It is performed to protect life. It requires a proper knowledge of the disease, and the manner in which the operation should be performed, the selection of the virus and the care of the patient during the different stages of the process, and a decision at the proper time as to the success or failure of the vaccination. This is entirely within the province of the physician and I cannot do better than quote the words of the laymen of vaccinating themselves and their families.

In conclusion I wish to say that a vaccination which is performed with care, for, need cause no apprehension as to the result. Unfortunately this operation is sometimes done while a child is dependent on a disease, such as scarlatina, diphtheria, etc., and the additional irritation of the vaccination may add to the severity of the symptoms, as would any local irritation. These complications occur not infrequently, and the vaccination is often held responsible for what would otherwise be a fatal issue. This is obviously wrong and brings vaccination into discredit.—A. H. Doty, M. D., in the New York Herald.

A Particular Favorite.

Our friend, the DAILY RECORD-UNION of Sacramento, has added another volume to its already long list. The RECORD-UNION is a particular favorite along the river, as it precedes the San Francisco dailies by several hours and contains a full summary of the world's important daily happenings. Its reports are always unprejudiced and not sensational, and its editorial comment ever sound and pure.

A Few Horse Notes.

Azote, the sensational trotter, lately formed one of the leaders of a four-horse team at Vina, and he was a good, willing horse.

Bart, a two-year-old chestnut gelding by Sir Mopced—Alamo, in won a freewheeling race at Saratoga, August 23d, in 1:02, with Lady Richmond and Sallie Woodford, also bred at Rancho del Paso, second in the race.

Inside of twelve years the Electioneer family has accomplished wonders. The following in the 210 list are descendants of the great sire who made Palo Alto famous: Fantasy 2:07 1/2, Arion 2:07 1/2, Sunol 2:08 1/2, Palo Alto 2:09 1/2, Azote 2:09 1/2, and Little Albert 2:10. What horse can beat this stonewall?

Minnie—Here is a story about a girl who refused to marry a man because his name was not in the match book. Minnie—(goodness!) The silly thing must have thought that married people had to be together most of the time.—Indianaapolis Journal.

ROYAL BAKING POWDER.

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Royal Baking Powder ABSOLUTELY PURE

PELICAN CLUB SHOOT.

Captain Ruhlstaeller's Good Score—Henry Gerber Wins the Medal.

The members of the Pelican Gun Club yesterday held their concluding target shooting match of the season at their grounds near the American River. The birds were a good lot, and, though swift, strong flyers, the shooters did fine work. Captain Frank Ruhlstaeller's score of 19 birds out of 20 is exceptionally good, and shows that the Captain belongs in the front rank of live-bird shooters.

The record for the best percentage during the season was won by Henry Gerber. Following are the scores in yesterday's medal shoot:

Table with names and scores: Ruhlstaeller, Sr., 19; Gerber, 18; King, 17; Ruhlstaeller, Jr., 16; Morrison, 15; Gerber, 14; Morrison, 13; Gerber, 12; Morrison, 11; Gerber, 10; Morrison, 9; Gerber, 8; Morrison, 7; Gerber, 6; Morrison, 5; Gerber, 4; Morrison, 3; Gerber, 2; Morrison, 1.

TWO SHOTS.

They Were Fired into the Air, But Drove a Big Crowd.

A big commotion was caused at Third and K streets shortly after midnight last night by the firing of two shots from a pistol and a lively footrace between two men.

It appears that four or five men were engaged in a row at Third and L streets when Officer Rutherford bore down upon them. The lighters scattered and Rutherford tried to catch one, but could not run fast enough. The man ran to K street and turned up toward Fourth, when the other fired two shots in the air to intimidate him.

CLOSE CALL.

Mrs. George Snydam Struck by a Wild Bullet.

While Mrs. George Snydam, who resides on Third street, between K and L, was stooping over a table in her kitchen yesterday, preparing dinner, she was struck on the lower part of her chest by a 25-caliber rifle bullet fired from a crowd. It was a glancing shot, but if it had struck a little higher, or she had been leaning a few inches farther forward, it might have proved fatal. As it was, the bullet struck a corset-steel, plowed a slight furrow along the surface and lodged in her clothing on the other side.

A WHEAT CASE.

Reversal of a Judgment for \$5,827, and a New Trial Ordered.

The Supreme Court has reversed the judgment and order denying defendant a new trial in the suit of O. L. Abbott vs. the 750 Lard and Water Company in the San Joaquin Valley.

HE TOOK A RIDE.

But He Did Not Know That the Cart Was Stolen.

Two men took a horse and cart which was tied in front of Weinstein, Lubin & Co.'s last night and started for a ride. They were considerably under the influence of liquor, and a man who saw them notified the police.

BRIEF NOTES.

A brakeman named J. W. Frazier had the middle finger of his right hand badly crushed on Saturday while coupling cars at Rocklin.

A water-glass on a locomotive flew to pieces at Blue Canyon and fragments struck Engineer Contractor over the left eye, cutting him in several places.

E. M. Leitch complains that a number of small boys congregate in one of his unoccupied houses at Second and Q streets, where they play cards and drink.

Antone Carlson was brought in from Elk Grove at midnight afternoon and lodged in the County Jail, where he will serve 120 days for misdemeanor embezzlement.

Deputy Sheriff H. C. McClure of Los Angeles arrived on Saturday with a man named William Wilson, sentenced to five years' imprisonment in Folsom Prison for burglary.

F. Seyler, indicted by the Federal Grand Jury on a charge of obstructing United States mails and interfering with interstate commerce, has given bonds in the sum of \$1,000. His sureties are John Conlon and L. Schaefer.

After hearing the evidence on Saturday in the suit of Mr. and Mrs. D. Murray against their whitem landlady, Mrs. Gilman, who evicted them by removing all the furniture from their room, Justice Levine took the matter under advisement.

The fruit product on the river having practically ceased, the large Acme was withdrawn from regular service on Friday, her Captain resuming his position as pilot on the Modoc. She, however, made a trip and brought up 4,711 sacks of potatoes yesterday.

W. McCants was arrested yesterday evening by Officer Mailey for disturbing the peace at Sixth and I streets. It was stated that he had been threatening to carve some of the neighbors with a knife. Mary Miller was brought in at the same time, charged with disturbing the peace.

ADOLPH SUTRO.

Written Up by One Who Claims to Know Him.

[From the Santa Barbara Independent.] There have been a great many queer things in California, the state of all kinds of political blunders, but the advent of Adolph Sutro to-day is a more serious, concerted and dangerous than any other man in California. Sutro is the only man in California who has made investment in any California thing of great profit and distinction. The way in which this venerable man has amassed his fortune is a thing of which the world should be proud. Here in California and everywhere else the man who has the biggest brains is the biggest success.

We ourselves have known this self-dissident reformer and philanthropist for many years, and are aware that there is to-day not a more serious, concerted and arrogant man living in the State of California than Adolph Sutro. The history of the Sutro tunnel is too well known to require any special mention. It is a thing of which the world should be proud. Here in California and everywhere else the man who has the biggest brains is the biggest success.

An engineer Sutro can be compared with the eminent fraud, Ferdinand L. Lesseps, who was once a great success and who is now a failure. Sutro is a man who is not only a success, but a success in every way.

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"The Nonpareil" Fall Opening!

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PLAIN AND TWO-TONED BOURETTE, PLAIN AND TWO-TONED BOUCLE, PLAIN AND TWO-TONED COVERT CLOTH.

One of the extreme styles for the coming season is a Plain Soleil Ground with Fancy Boucle design. We are showing them in all the latest colorings. Novelty Pattern Suits from \$2 75 to \$35 per suit.

Black Goods Department.

In this department we have never shown as pretty designs in medium-priced fabrics as this season. We have every style and price in Black Goods that one could wish for, from 36-inch English Casimere at 20 cents per yard up to Novelty Pattern Suits at \$25.

Novelty Suitings of qualities that we sold last season at 75c, \$1, \$1 25 and \$1 50, will be sold this season at 50c, 75c, \$1, \$1 15 and \$1 25. The designs are prettier than ever.

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