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THE PLAGUE AT ITS HOME

Introduction, Spread and Treatment of Obolera in Russia.

REPORT OF AN AMERICAN OFFICIAL

An Important Review of Preventive Measures, Investigations and Results-Success of the Irrigation Treatment-Medical Details.

Consul General Crawford at St. Petersburg reports to the State department as follows: The introduction of cholera into Russia became at once a question of international interest and concern. I have, therefore, watched with great care the progress of the epidemic since Its entrance into the empire at Samarcano, whence it came rapidly to Baku, Tiffis, Astrakhan and thence up the Volga into the interior. I have carefully noted the measures adopted by the Russian government in the several places of importrace visited by the epidemic to combat the discuse and reduce its ravages if possible to the minimum I have studied the work of the sanitary officials, as well as that of the medical corps of the empire and I believe II to be my duty to make a report to the department upon the measures taken against the epidemic in Russia, especially as cholera is threatening to invade the United

Government Measures Against Cholera-It is now believed by the medical authorities that an effective quarantine might have been established at Astrakhan, on the Casplan sen, sufficiently effective, at least, to have prevented the epidemic from going up the Volca and thus infecting the interior of

The uncertainty of the good results of quarantine at this point, coupled with the fact that the local authorities were not well prepared for such a quarantine, resulted in longing the doors of this important city open to the unwelcome visitor. As soon, however, as choicen broke out in Baku the government built barrucks at Astrakban for its treatment, appointed a sanitary service and detailed officers to keep watch day and night for chalcrate patients, who became person-ally responsible for the transport of all such cases to the barracks. It was the plan of the government to enforce a rigid system of isolation against the spread of the epidemic: this plan soon proved to be impracticable and, in fact, impossible, due, it is claimed, to the influence of the masses, who were unwilling to assist the authorities.

willing to assist the nuthorities.

The epidemic gradually spread inland through the towns of the Volga basin and had reached Nijni-Novgorod before the authorities were able in any marked degree to check its ravages. Here his excellency, Baranoff, governor of the province, took the matter rigidly in hand and acted as a distinct. tor in all matters touching the epidemic Governor Baranuff decreed that all persons arguing that the disease was not an epidemic of Asiatic cholera and all persons in any way opposing the orders of the sanitary commission and of the doctors should be imcrose severe punishment upon all persons found guilty of spreading abruding and exaggers that reports of the disease. He organized a very systematic plan of disinfection, the first and foremost of which was the absolute cleansing of the city. Public streets, sewers, public buildings, as well as all pri-vate houses in the city, were, under the strictest surveillance, thoroughly cleaned and disinfected with either carbolic acid, bl-chloride of mercury, ferric sulphate, dry heat, steamor belling water. Under the sani-tary laws of Governor Baranoff a rigid in-spection of all classes of food stuffs, includspection of all classes of food staffs, includ-ing water and milk, was strictly enforced. Articles of food believed to be especially limite to carry infection, such as mushrooms, berries, caviare, especially unclear cabbage, the not freshly killed, all fruit and vegeta-bles not absolutely fresh and clean, were gathered up by the authorities and sum-marily destroyed.

With regurd to choloraic patients a vigid

out funeral rites, an especial burying ground having been devoted to such service Every house in which a patient may have been taken til from cholera was thoroughly disinfected, hot water steam or dry heat being used wherever practicable; this in addition to the general disinfection of all the

houses in the city.
I may add here that, based upon observation, experience and practical tests in the present epidemic, the medical authorities of the highest standing in Russia now affirm that disinfection, as generally understood and practiced, is of little or no practical value, excepting such disinfection as properly comes in the domain of ther, ugh cleanli-ness. These medical authorities declare that the system of trying to kill the bacterm of cholera by any form of chemical disinfes-tion is of little or no avail. It may be interesting to note that the experts in chosern in Russia look upon the number of files in a house or locality as indicating the amount of danger from uncleanliness in an epitemic cholera. Plies have been found to be fected with cholerak bacteria, and there fore are believed to be prominent agents in the sprend of the disease. It is the opinion of the medical experts who have studied cholera in Russia that boiled drinks and thoroughly cooked foods are a safeguary against cholera. Thorough cleanliness, ther oughly belied drinks and theroughly cooked food stuffs may be regarded as the present motto of the sanitary and medical commis-

sion of Russia. In addition to the preventive methods enforced by Governor Baranoff against cholera, as mentioned above, a very systematic plan was organized on all the steam and canal boats, railway trains and trains to provent as much as possible the spread of the epidemic. All trains were ordered to carry boiling water, as well as boiled drinkin water, for the use of the pussengers. U istered cars were covered with elicioth and often with linen slips which were re reboiled. The closets and washrooms of each car were thoroughly cleaned by boiling water for every trip and disinfected with carbolic acid. A choicera car, thoroughly equipped for the emergency and attended by a physician, was attached to each train Similar precaujons were taken on steam and canal boats and on tram cars.

The results of the rigid practice organized and carried out in Nijni-Novgorod by Governor Baranoff proved to be eminently successful. Therefore a similar line of sanitation was adopted in Moscow, and with excellent results. Since I have been in Russia I have often heard it remarked that Moscow uncleancity; but the small number of deaths from cholera in the present epidemic would seem to argue to the contrary. I had a sion to visit Moscow on the outbrenk of cholers there and I particularly noticed very great improvement in this particulation on the provement of the place. The tire city was clean and, as the prefect of Moscow personally assured me, was in excel-lent condition to combut the epidemic. It is a matter of common surprise that cholers did not assume a seriously epidemic form in that city, due, it is believed, entirely to the rigid precautions taken with reference to

In St. Petersburg a similar line of precautions was promptly undertaken and carried out. General von Wahl, the prefect of the city, was as intiring as he was thorough in preparing the city in advance of the outbreak of the epidemic, and I may add that long before the first case appeared in the city everything was in readiness for the enemy. The much leved mushrooms, state cabbage, caviare, berries, and poor fruit mercilessly dean with. A thorough watch was set over the market places, fish stands. fruit and vegetable stores meat and milk shops, and everything not absolutely beyond suspicion in the was of feed stuffs was confiscated and summarily destroyed. Thanks, it is believed, to the faithful carrying out of both the letter and the spirit of the orders of General von Wahl, the present epidemic has assumed only a mild form in St. Peters

Treatment by the Russian Physicians. I have personally visited the cholera hospitals of this city, and I have been greatly pleased with the arrangements for the com-

modern designs; the hospital conveniences, as well as the care of the sick, will compare very favorably with those of the United

Nursing in the cholera hospitals in St. Nursing in the choicen hospitals in St. Petersburg is under the supervision of the sisters of the Society of the Red Cross. There are two classes of hospital aftendants: one class composed of men nurses, whose duty it is to sook after the more luberious work of the hospitalist the other class is composed entirely of women, who attend to the more delicate services and who are required to been the hospitalist in profest order required. to keep the hospital in perfect order besides serving as usolstants to the male nurses There are male curses in charge of the bath rooms, who receive the patients, bothe and dress them, and place them in the bespital beds of the different wards. The nursing, I am able to say from personal observation, is

The medical treatment of cholers in Russia in general is essentially the same as that practiced in St. Petersburg. The bosic idea of this treatment is to assist as far as passible that open or function which is most seriously affected by the discuss. The especial features of this treatment consist in the subsubmences of interior. in the subsutuneous of injection salt water, following the methods of the Italian physician Cantane. Another measure is the introduction of a solution of taunic acid, properly diffused, into the bowels firect. In er to make this treatment more east, understood by the general reader, I will follow an average patient to the choices hospital and describe the treatment as practiced era, not as suddenly as generally supposed and after much personnels by his friends and relatives, he is finally related to the authorities. In this city there are police chol-era stations in each of which there are special poles physicians, whose duty it is to assist in every case brought to their natice. The sont streetly to smoot the shoers conjugates according against lies own will and often, indeed too late for effective treatment. The police physician remains behind and superintends the disinfaction of the apartments of the patient according to prescribed methods. At the bospital the patient is first taken to the bath room of the ward to which he is using a untressed and placed to be is assigned, undressed, and placed a both tub of water somewhat warmer in the temperature of the body, where he cept immersed for a period of ten to een minutes, after which he is dressed in clean lines shirt and drawers and put to bed. On his way to his bod he is tem-perarily wrapped in woolen blankets. He is then examined by the ward physician, who of his condition, something as follows: John Jones; age 40, married, wife and John Jones; age 40, married, wife and children; garden laterer; residence. No. In Peski, St. Petersburg; sick three days before coming to hospital from diarrhesa, pain in back headache, loss of appetite, siicht nausea; sein warm; temperature 12 below normal; pulse, woak. The following will probably be the treatment: Salol, onegramme at a done every those probably be the treatment. Salol, one gramme at a dose every three hours, with subcutations in portion of solution of salt. The diet will be boiled milk, bread, and ten. It should be stated here that every nody drinks ten in Russia, it is, in fact the national drink. The salt water used in this injection will be about one liter of a one-half of one per cent solution. This solution is prepared by the drangists as follows. Pistilled water, sterilized by heat, with salt enough added to make a solution approximating as near as possible the plasma of the blood. This solution is kept in bottles such This solution is kept in bottles such as are used in intornatories and sloppered with sterilized cotton. When the solution is to be used its temperature is raised to blood heat by immersing the bottle containing it in hot water A large glass-burreled syrings, with a needle of about five inches syrings, with a needle of about five inches ing, is used in making the subcutaneous injection. The site of the puncture of the hypothermic needle is generally in the aboundard wall, to the right and left of the unballeds, one-half of the quantity peing injected into either side. In the course of from six to ten hours the sait water is completely absorbed as shown in the polarious pletely absorbed, as shown by the subsidence of the swelling. Not infrequently the injec-tion produces considerable inflammation.

and, rarely putrescence, due to some un-avoidable imperfection in the operation. The value of this method is in doubt even at the hospitals here, but it is believed to afford temporary relief, at least, to the patient, and apparently simproves the circulation and fish not freshily killed, all fruit and vegetahies not absolutely fresh and clean, were
gathered up by the authorities and summarily destroyed.

With regard to cholerate patients, a rigid
system was enforced to prevent contagion.

All the clothes of such patients were immediately burned and new suits given them by
the local authorities. The bodies of the dead
were immediately burned and many being the local form of the dead
were immediately burned and probably influences favorably the diarrigation method is under rigid trial
in this city and I should not be
surprised to find it finally discarded. The same may be said of the internal use of salol in these cases, a chemical
product of considerable reputation and
merit in other instances and harmless. This
preparation is extensively used throughout reparation is extensively used throughou Russia, perhaps in a large measure due to the fact that its chemical origin is St. Peters-burg, whence it has traveled around the world.

The diet, as mentioned above—namely, milk, bread, and tea—has proved to be entirely satisfactory.

At the next visit of the physician some hours later the atient will probably be worse, and further evidence of blood poisoning be manifest through convulsions and nitings, with skin cold, kidneys inactive and with septimentia if the case is grave. The treatment is now changed, and subcu taneous injections of digretin are made with the hope of forcing, it possible, the kidneys to act; bismuth and option to relieve the veniting and a hot air bath to bring up the temperature of the surface of the body are also used. The diuretin as thus used is also undergoing a thorough test here, and I should not be surprised at seeing its efficacy in these cases seriously questioned. The bismuth and opium treatment is too well known in the United States to require further mentioning here. I would like to add, however, my personal testimony to the great efficacy of the hot air bath, especially in cases in the algid state. I have seen this used in the pitals here in cholera cases, and, with mpt and, I believe, permanently good results. A very simple apparatus can easily constructed in any household for application of hot air in such cases. frame may be placed on the rails of the bed, on which may be spread ordinary biankets well tucked in at the sides and around the atient. Underneath the blankers on one ide of the bed may be leserted one end of the clow of a small stovepipe, while the other end is placed over the chimney of an inary kerosene lamn to receive the heat of the flame, thus sending a current of hot air under the blankets of the patient. A long thermometer is thrust through the blankets in contact with the patient, and the temperature is thus regulated. This method of combaling the cold stage of the disease is now in general use here and grows in favor with each application. Many patients are believed to have been saved by this tre ment alone. I personally recall one case which I regarded hopeless, and which was

At the next visit of the physician our pa-tient will apparently be somewhat improved, pulse stronger, body warmer, but with ricewater diarrhoes and more profuse and frequent. The treatment now will probably be an injection into the bowels of about one er of a solution of tannic acid of the proper ength. This will probably be the last prescription, as the patient with symptoms as described abase will probably soon pass into the comatose state, in which further medical aid will be of no value. This use of tannic acid is old, and, of course, well known the average physician, and has been given m these cases on the supposition that the media of the germs of cholera are of alsaine reaction, the injection being thus in ended to counteract the choleraic poison Another reason for thus using tannic acid is its well known astringent qualities. Both of these theories are being seriously ques-

tioned by modern investigation in cholera Of course, other treatment is given, as the symptoms of the several patients differ. Beta-napthol mixed with bismuth is sometimes given instead of salol for the diarrhora stage, and sometimes other antiseptics; came is also given with considerable success. apparently to relieve vomiting, and in doses of about three drops of a 10 per cent solu-tion. In cases coming early to the bospital, when not violently ill, a dose of thirty grammes of castor oil is given. Hypsdermic injections of morne are used to assuage the cramps olic pains. The patients are also given as far as practicable, but water baths daily in some cases a liter of sait solution has been injected directly into the veins of the patient at the anxie, but the method is now vgarded as both dangerous and ineffective. The essential features of the treatment of

cholera as practiced in Russia in the present pinemic may be summarized as follows trist, hot water and het air baths; second subcutaneous injections into the approximal wall of 1 liter of a one-half of 1 per cent pleased with the arrangements for the comfort and treatment of their patients. All of the
appliances and instruments are of approved

appliances and instruments are of approved

appliances and instruments are of approved

the lower towel of tannic acid and oplum:

1. Obuchoff hospitals in this city.

1. Obuchoff hospitals. St. Petersburg. Sepinch in diameter, or, speaking more technically, of the diameter of a No. 50 sound of

neutly successful career in the Oldenburg Institute of Experimental Medicine in this city, was selected by the Russian government go to Baku, erect a laboratory there deconduct a series of scientific experiments relative to the cause of cholera, and more especially to its locus in the human body. The name of the physician above referred to is Arthur G. Blackstein of New York city. a graduate of Cornell university, where he re-ceived the degree of B. A. in 1882, whence he went to Leipsic and received the degree of M. D. from the medical university of that At D. From the medical university of that place in 1887. Returning to the United States, he was made a fellow in pathology of the Johns Hopkins university in 1800-91. One year ago he came to the Oldenburg In-stitute of Experimental Medicine in this titute of Experimental Medicine in this ity, where he has devoted his entire time to the study of disease-producing bacilli and kindred studies. On the breaking out of the epidemic in Hussia. Dr. Blackstein was thought to be the best equipped for conducting a series of scientific investigations on cholera. He was therefore, by special recommendation made an active member of the lustifute of Experimental Medicine of St. Petersburg, and was Immediately intrusted with the important mission above

According to Dr. Blackstein, there have been and are still two very different meth-eds of pursuing the scientific study of cholora, one of which has been termed the been and are still two very different methods of pursaing the scientific study of cholora, one of which has been termed the epidemiological method. The collecting of statistics and observations as to the influence of soil, air water, and plants upon the course of the epidemic belong to this method. In this way much valuable information has been collected by Pettenkofer. The second method, and was successfully inaugurated by Koch. The discovery of a specific germ was a great step in advance in the scientific study of cholera. The majority of observers agree that the so-called comma the scientific study of cholera. The majority of observers agree that the so-called comma tarillus is to be found only in the excreta of cholera patients and that in typical cases it is always to be found there. At the cholera haboratory in Baku Dr. Blackslein examined a large number of cholera patients with reference to this question, and he has assured me personally that his observations have convinced him of the correctness of this have convinced him of the correctness of this

The great German Pettenkofer claims that The great German Pettenkofer claims that a certain condition of the soil, as yet unknown, is a necessity for the development of cholera. At any rate, he claims that the biological properties of the comma bacillus are insufficient in themselves to account for the origin of the cholera epidemic. Pettenkofer's inzenious and masterly work is valuable and important—a remark which would seem superflower. All I not think that he is the conditions and in the cholera conditions. superfluous, did I not think that it is being disregarded by American workers in this line of research.

Kech on the other hand, claims that an infection of comma bacillus, even when the cultures are pure, will produce cholera regardless of meteorological conditions. It is interesting to note that in Dr. Blackstein's investigations at Baku he concludes that Roch's work is correct, but that his logic is Kell's work is correct, but that his logic is faulty. Dr. Blackstein argues that Koch's logical inference should be this. The comma bacilius, therefore, plays a part in the cause of Asiatic choicra. Dr. Blackstein would ask the question. What part to Koch's bac-teria play in the causation of choicraf and at the same time would state in so many words what the aspect of the scientific study of Asiatic choicra is at the present due. of Asiatic cholera is at the present day. He says that if workers in this line of study, especially those in England and India, would note in the solution of this problem they would do more good than in persisting in an effort to belittle the value of Koch's great

discovery.
Dr. Blackstein admits that the Russian government has made great efforts to check the progress of the epidemic, and in this has been generally successful, especially in the larger cities. But in these towns in which the authorities apparently waited for the decision of the pacteriologist before recog-nizing the existence of Asiatic cholera in their midst, much harm was unintentionally done. He claims, what every skillful physi-cian must - admit, that the diagnosis of Asiatic cholera can be unerringly made with-out the aid of the microscope, and should be made without it in the actual treatment of

Dr. Blackstein concludes that the phrase, "killing bacteria," can only have practical interest to those people whose business is to disinfect places and things. The idea, he aims, which the physician who deals with cholera patients should be impressed with should be that the bacteria can be made harmless. He is fully convinced, as a result ernment laboratory at Baku, that the direct scene of action in choicra is the intestinal canal. A disinfection of this canal is, of course, impossible, but, fortunately, it is un necessary, as the medical profession pos-sesses means to reduce what is known as in-

testinal putrefaction to a minimum.

Another very important conclusion of the Baku investigations is that, in order to contract Asiatic cholera, one must so to speak either eat it or drink it; that is to say, th cholera poison, be it the comma bacillus or otherwise, must be taken into the stomach in its active state in food or in drink. A still more important result of those investigations render the cholera poison innocuous. I these conclusions are sound we have a cer tain safeguard against an epidemic o cholers. Dr. Blackstein approves of the use of saloi, bismuth and beta-napthol, but concludes from his observations that the tannic acid injectio nto the bowels, as well as hypodermic and introvenous injections, do harm without doing any good. He favors a thorough irrigation gastro-intestinal canal, and afterns that if the physician would treat the cho which a surgeon treats a wound he would

most with greater success.

It would be beyond the aim of this report go into the details of the work of e Baku cholera laboratory, especially as Blackstein assures me that he will make elaborate expose of that work for the dical world in due course. I have there-e only intended to give a general summary of the conclusions reached in the Baku in-vestigations. I simply wish the public at home to know that, if proper care is taken with their food and drink, there need be but tittle apprehension over cholera in their midst.

Treatment of Cholera by Irrigation. The method of treating cholera patients

by irrigation of the intestinal canal was introduced at the Obschoff hospital, nis city, September 3, 1892 Lec. who came here p fortified with testimonials the express purpose of obtaining permission to treat a number of cholera patients by this method. By way of introduction, I may say that Dr. Lee is resident physician of the Palmer house, Chicago. He is a fellow of the American Academy of Medicine, mem-ber of the American Medical association. and was a member of the committee of re-vision of the United States Pharmacopaga in 1860. On arriving at St. Petersburg he was at once put in communication with the medical corps of the cholera bospital, to whom he stated the object of his visit and explained in detail his methods of cholera treatment. He gave the results of his ex-perience in Chicago in the treatment of enterosculitis by the irrigation method. As holera is also an enteroco-litis, and as the method proposed by him seemed reasonabl nysiological and harmless, it was decided the hospital corps to give Dr. Lee a fair trial. He was accordingly given one case, which was admitted to be grave. This case was promptly treated, but with imperfect apparatus, and on the second or third day was converseent. He was then given two other cases, and they recovered. He was then given four, and sooner or later he had treated in all twenty seven cases personally, twenty-four of which recover showing a mortality of only 12 per cent. have personally visited these patients at the Obuchoff hospital and have made clinical notes in reference to them; I have takes with several physicians of the hospital staff and have received from them only words of the highest praise over the results obtained Before giving an explanation of this method I will give a brief clinical report of the twenty-seven patients treated by Dr. Lee as saw them purposely abbreviating the same by the omission of names and other uninthat the choicra patients treated in public hospitals belong almost invariably to poor classes. It has been estimated that only about one-third of all choicra cases are taken to the public hospitals in this city.

1. Obuchoff hospital. St. Petersburg, September 3, 1869. Patient choicra old many eresting data. Of course, it is understood

inactive kidneys: fifth, internal administration of said, bismuth, beta-napthel, opium, cocame and caster oil, as respectively indicated sixth, hypodermic injections of morphine.

Government Investigations.

I take great pleasure and pride in calling attention to the fact that a young physician intention to the fact that a young physician attention to the fact that a young physician incutive successful career in the Oldenburg intersection through a flexible rubber tube. the color through a flexible rubber tube twenty-six inches longite irrigation was continued until the outflow was cient. The natient promptly improved. A similar treatment was given the hast day, which was followed by convalences, and in about a week thereafter he was illscharged cured.

2. Patient new arrivale middle age; severe cholors proporting sain solo and example.

2. Patient new arrivmer middle age; severe cholera possoning; skin, cold and evanotic, pulse feeble, kidneys innerive. This patient promptly recovered.

8. Boy, 16 years old: admitted September 6; skin evanotic, pulse feeble, resuiration short and heavy, much diarrhora and vomiting. The case was admitted to be grave. The injecting tube, which is feedble, was carrivally arrased the entire leaven of the teams. The injecting tube, which is fexible, was carrefully passed the entire length of the transverse colon and two and one-half railens of strong Castile soap ands were injected. The boy was then bathed and placed in bed. On the following day his symptoms had so much improved that it was thought unnecessary to give him further treatment. Prompt recovery.

4. Patient new arrival: in comatose state when admitted. Although treated, the patient died same day. Post mortem revealed only the usual picture of cholera septicaemia. 5. Man of middle are large and strong; had been sick two days before arrival: profuse diarrhora and vocaltar, skin warm, make moderate in facilities are proportion. pulse moderate; iritated once; prompt re-

S. Young man; skin very blue, surface cold labored breathing, pulse very feeble, profuse diarrhees and counting. He was ir-rigated once the first day and once the sec-ond. There was prompt recovery. 9. Old man; very sick; two treatments;

recovery.

10. Middle aged, black haired peasant: exhausted by several days diarrhom and vomiting; abdomen collapsed; cyanotic; unconscious; pulse hardly perceptible; two irrigations, followed by recovery.

tions, followed by recovery.

11. Man, middle aged, gray hair; skin very cold, anylous expression, benumbed intellect, very sealer diarrhora, but little vomiting, skin very blue; irrigated once the first day; died the next. Only the usual evidences of cholera poisoning were revealed in the post mortem at which I was personally present.

12. Man with small features, about 40 years old; had been sick three days before arrival; skin warm, pulse good, diarrhora and vomiting, with colic pains. There were two irrigation treatments, followed by recovery.

18. Patient a cook short, heavy set blonde. 13. Patient a cook short, heavy set blonde; had been sick three days; very severe diarrnosa, but little vomiting; mind dull, seldom spoke, difficult to arouse, skin blue and cold, abdomen collapsed irrigation. The patient died that hight. The post mortem revealed only the usual evidences of cholera-14. Young man, noute case; one day slok-diarrhosa and vomiting, with cramps; one irrigation, recovery. irrigation: recovery, 15. Old man; excessive vomiting, great

prostration, pulse week, skin cold and bine labored breathing. After the first irrigation the abdominal pain was relieved. He re-16. Case complicated with chronic gustro-

enteritis of severe character; vomiting and purging. The patient recovered. 17. Young man; had been sick several days; frequent diarrhona and vomiting. In this case Dr. Lee was unable to introduce the injection tube into the colon, but performed thorough rectal irrigation with good results.

The patient recovered.

18. Young man, yellow haired; sick one day before arrival; skin warm, pulse good; great abdominal pains and diarrhoca. There were two irrigations the first day and two the second. The patient recovered. 19 Old man; had been some time sick in hospital and would not convaiesce. Irriga-tion removed a large quantity of green, flaky atings from the bowels, followed by relieand recovery.

and recovery,

30. Patient sick one day! cyanotic, skin
celd and clammy, lips blue, pulse feeble,
temperature subnormal; intellect dull; algid

21. Patient a young man; temperature subnormal, pulse feeble, face and hands cold, skin blue, tongue as usual heavily coated, diarrhora, vomiting and abdominal pains. The patient was irrigated morning and even ng of the first day and recovered.
22. Young man taken suddenly ill on the

brought direct to the profuse diarrhoea and ing, blue lips, pale, coated tongue. There was one irrigation the first day and one the second, followed by recovery. 23. Old man; severe pain, excessive diarrhosa, greatly emaciated, very weak pulse, skin blue in spots; had been sick two days before arrival mind dull, respiration fre-quent and labored. There were two irriga-tions the first day, followed by recovery. Boy; had been sich one day; skin blu cold, abdomen collapsed, violent dias rhose and comiting, with convulsions. After

cence and quick recovery.

25. Man, middle age; sick one day before arrival; pulse almost imperceptible, lips dark blue, eyes dull and heavy, cheeks sunken, abdomen collapsed skin cold and claumy, severe diarrhoon and much resening, intellect This case was grave and thought to bound. The patient was irrigated twice the first day and twice the second, followed Young man, recent case; skin blue and

cold, anxious expression, pulse extremely weak, respiration labored, profuse diarrhous and veniting, with severe abdominal pains. There was recovery after three irrigations, two the first day and one the second. 27. Man. middle age, tall; face very red,

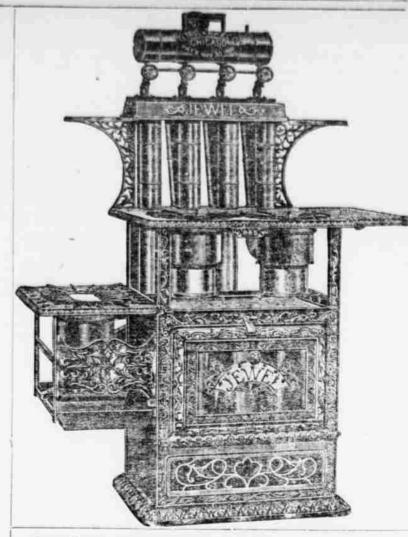
hands blue skin cold, had been sick one day; profuse diarrhosa, but no vanning, pulse weak, temperature normal. He recovered after two irrugations.

Certainly, I do not wish to intimate that the treatment of the twenty-seven cases of cholors as detailed above is sufficient to establish the permanent value of the irriga tion method in this disease. I believe how-ever, that enough has been done in this di-rection to demand the careful atten-tion of the medical fraternity and to call for a thorough investigation of this treatment. It is in this spirit and with this motive that I make this report. In this connection I would say that the physicians of the Obuchoff hospital, which is the largest cholera hospital in this city, concluded, after seeing the results of the twenty-seven cases above mentioned, that the irrigation metho should be given a fair and impartial trial The chief of the hospital corps therefore as-sured Dr. Lee, as well as myself, that this method of treating cholera should be put on trial for six months after which an official report with reference to its value would be published. I would also add my personal testimony to the fact that I happened to call at the hospital a few days after the resolution to put this method on trial and was pleased to see that the physicians were practicing the irrigation method. In fact, I saw a patient under this treatment during He was anconscious, collapsed cyanotic and co.d.and Lazid to the physician that, in my opinion, he could not recover. Two days later I paceived news from the hospital that this same patient was conva-

I trust, therefore, that I may be pardoned for urging in this report that the irrigation method of treating cholera be given a fair trial should the epidemic unfortunately visit

the United States. The Irrigation Method.

The treatment of cholera by irrigation is used upon the general belief—and this be-lef has been intensified by the experiments Blackstein, and mentioned in this reort-that cholera is the result of some form f poison, be it incteria or otherwise, which cls on the tissues of the colon and somer or later poisons the system. This treatment ashing out the bowels, and as high up as ossible, with some demasting and disinfect-ic liquid that is not narmful. The experiments of Dr Lee, which have been con-firmed by Dr. Blackstein in his special work at Baku, go to show that strong Castile sonp suds is most effective for this purpose The apparatus used consists of a plain rubber tube about four feet long and from one-half to three-fourths of an inch in diameter, or, speaking more tech-



JEWEL PROCESS CABINET RANGE One of the 40 styles of Jawel Stoves. This stove has no

competitor in the stove world.

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the French scale. This tube can be secured to this, the patient was given distilled at any medical supply store. It should be start freely, either het or cold, as flexible with only sufficient resistance to he justicined. In which a little common sasts in passing the angle of the colon. In the treatment at the hospital here the tube symptoms however, other remedies were the treatment at the hospital here the tube was passed entirely through the transverse olon in nearly every instance. This tube should taper bluntly at the end, in the exact enter of which should be an aperture equal in size to about one third of the caliber of the tube itself. A glass jar sufficient to conain about three gallons and with a common aucet attachment at the bottom is placed in a shelf about six or seven feet above the To the fancet is attached the usual unber tube, as in the ordinary fountain yringe, the other end of which is properly onnected to the injecting tube above men-ioned after it has been carefully passed into the colon. The patient, of course is pre-viously prepared for this operation and placed in position on the irrigation table in the immediate vicinity of the apparatus. in cholera. The giars jar is then filled with Castile soan sugs sufficiently strong to show indes The fauret is then turned, and the irrigation is begun and continued until outflow consists of clean soapsuds. The patient is then taken from the irrigation table and placed in a bath of the normal temperature of the body, after which he is properly dressed and put to bed. A second irrigation, as practiced by Dr. Lee, follows the first in the course of from six to The latest practice in the economy of ie case. It is claimed that the irrigation of the colon thus thoroughly performed pro-fuces sufficient stimulus and reaction to

In addition to this treatment Dr. Lee and the physicians of the choicea hospitals here favor the washing out of the stomach by the isual method, although this practice was not resorted to in the twenty-seven cases above enumerated. One of the physicians the hospital, however, hus assured me at stomach washing will be added irrigation of the colon in the hospitals in cases sufficiently grave to suggest it may be noted that of all the patients that I saw under treatment by this method not one offered the slightest objection thereto, but. on the contrary, seemed to think that some thing was being done for their relief.

ause the contents of the small intestine to

rrigation removes.

ass freely into the colon, which a second

Other preparations have been madded to the soap suds in this treatment at the hos-pital intended, if possible, to make the irriration more effective; but such modifica cussed here, as they will suggest themselves cussed here, as they will suggest themselves to the general physician, and especially as soan suds unmedicated produce equally nat-isfactory results. It will, of course, be understood that the soap suds are made with distilled water or water that has been

The internal medication used by Dr. Lee is equally simple. He gave generally hydrogen dioxide (H2 O2) which is nothing more than distilled water containing an extra atom of oxygen. This he gave every two or three hours and in cupful doses. In add tion ognize its importance.

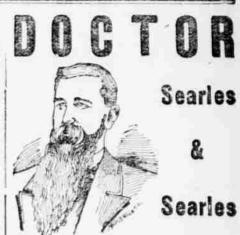
added, such as will occur to the mind of the general practitioner and which I need not

here counterate.
It may add interest and weight to this report to say that since its preparation I have again consulted one of the principal physi-cians of the hospital staff, who, after examining it in detail, assured me that it meets with his entire approbation. The same phy-sician desired me to say that the same treatment has been used in dysentery simple cases of cola-enteritis since Dr departure with excellent results, and that the irrigation treatment is still continued at the Obuchoff hospital with marked success.

If you do not use a whole bottle of Cook's Extra Dry Champagne at once, a rubber cork will keep it for days.

The Wearing of Rails.

rolling stock on rallways is to turn the cars at the end of each trip, whereby a large percentage of extra wear and tear is saved. Some years ago a portion of the Wabash railroad with old English iron rails and a small part with steel rails from the Carnegle mills. It became necessary after a time to remove some of the main line ralls to another part of the road, and it was observed that after relaying them many gave out immediately, while others manifested no signs of wear. To determine the reason of this apparently unaccountable condition an investigation was ordered which showed that the road from which the ralls had been removed was built in a northwest-southeast direction and that in relaying a large number had been turned end for end. These that had not been so placed exhibited no ad-ditional loss by attrition, while the turned rails succumbed in from thirty to ninety days. The conclusion arrived at was that the metal had become point-ized from long use, when first laid, and that the fiber was broken up by the traffic in the opposite direction. It was further proved that east-iron wheels generally yielded twice the mileage then the cars were turned at each end of the journey than when they were run backward and forward without reversing. Notwithstanding the value of this discovery, it was not universally utilized. and it is only recently that some of the American railroads have begun to rec-



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