discretion to appropriate this money when received by

time in stamping them out. There can be little doubt that, even if mental deficiency does not always descend directly from parent to child, the children of deficient parents are not likely to succeed in the world. Further investigation will, I believe, show that among the children of deficient parents a large percentage have some marked neurotic taint, and they tend to degenerate, and materially to increase the ranks of paupers, prostitutes, drunkards, and criminals. More than one of our most prominent thinkers seem to be coming to the conclusion that the great work of the future towards solving social problems will lie in the direction of securing that the population shall be increased from the healthiest stock. While many of us may still think this too Utopian for serious consideration, we may at least begin at the opposite end of the scale by taking measures to segregate the mentally deficient.

SMALL POX IN AN INSTITUTION.

F. R. HUXLEY, M. D., FARIBAULT, MINN.

ON June, 8, 1901, while an assistant physician at the Minnesota School for Feeble-Minded, my attention was called on my morning round in Sunnyside, one of the buildings of the Custodial Department, to Joe C, a fairly low grade boy, 22 years of age.

His face was flushed and he complained of a severe headache. He was sent to the general hospital where he was placed alone in a small ward. His temperature was found to be 104 .8 axillary, pulse 105. (We had found that axillary temperature was .6 degree lower than by mouth.)

Shortly afterward he began to vomit. Cold sponges and cathartics were ordered. Evening temperature was 103, pulse 100. On the next day a' superficial macular rash, presenting no shotty feeling, appeared mostly on the body, a few maculae however were on the face. There were some papules but no vesicles. Patient was feeling comfortable. Temp. 99; pulse 90. The evening Temp, was 98.8, pulse 95.

On the third day there appeared various stages of vesicles and papules, the former showing no umbilication. The eruption appeared less superficial than on the preceding day and showed slight areola.

A diagnosis of small-pox was made and the patient was sent to quarantine hospital with a Temp, of 98, evening 98.8.

On the fourth day eruption was approximately in the vesicular stage, many vesicles containing cloudy fluid and some showing a tendency to umbilication.

On the fifth day the morning Temp, was 99, evening 99.2. On the sixth day about 150 pustules were counted on the face and the body was covered including the palms of the hands, soles of the feet and edges of the hair. The eyelids were also involved and in many places the eruption was confluent. There was no tendency to successive crops. A marked conjunctivitis necessitated the irrigation of the eyes every four hours.

On the seventh day the eruption was largely pustular with some crusts on the face. Patient had marked malaise. Morning Temp, 100, evening 101.

On the eighth day evening Temp, was 104, but fell to 100 on the evening of the ninth.

On the tenth day the Temp, was 98.4 and remained practically normal throughout.

The crusts disappeared more rapidly on the face than on the body and on the fourteenth day the face was practically clear. The patient was released on the fifty-second day.

This patient had not been vaccinated and presented a severe form of the disease typical of the unvaccinated cases, 14 in number.

All this group of cases showed a secondary rise of temperature above 99 axillary except one which showed a very severe eruption and marked malaise, the case of Martin K., age 15 years. Eruption appeared on June 14 with a few vesicles on forehead which rapidly covered the entire body and it was with difficulty that he was restrained from scratching. The pustular stage began in two days, crusts formed in three and there were marked discoloration and pitting. He was discharged on the forty-third day. His temperature however remained practically normal throughout.

All unvaccinated cases were severe. The prodromal symptoms however were noticed only in the first case recorded, a brighter boy. With this class of patients one had to depend altogether on the objective symptoms as there was no suspicion of small-pox until the appearance of an eruption.

All the vaccinated cases, of which there were three among the inmates, were mild.

Eddie B. Epileptic. Age 12 years. Had very few papules and vesicles on face and body, and the second day after admission they became pustular. On the third crusts began to form especially on face. These rapidly dried up until on the fifteenth day they had almost all disappeared, when an acute parenchymatous nephritits supervened. He had a convulsion and Temp, rose to 103.8 but on the seventeenth it dropped to normal. He was discharged on the twenty-second day with the nephritis much improved. Later examination showed no sign of kidney disease.

Eva T. Epileptic. Age 14 years. Vaccinated successfully. Admitted Aug. 29. Had a history of headache and nausea. Eruption was beginning pustular stage, more advanced on face than on body. She had been isolated on account of vomiting three days previously. There was one papule on palm of hand, three on soles of feet and but few on face or body. The eruption was mild and dried up rapidly and was attended with very little malaise. On the eighth day the crusts were largely off the face. She was discharged on the eighteenth day. When admitted this patient had an evening temperature of 102 axillary which dropped the next morning to 98, rose to 99 .4 and remained practically normal throughout the attack.

Joe M. Also vaccinated, presented a mild form of the disease.

Summary of the 21 cases of variola and varioloid, 17 of which were among inmates and 4 among vaccinated nurses, all the latter being varioloid.

Prodromes were noticed in four cases, three of which were among nurses.

No prodromal rash was observed. First eruption appeared on forehead or upper part of face in 16 cases among children and one among nurses.

In the other cases, first noticed on body in three instances and on one the first papule appeared on leg. This case subsequently developed a severe eruption and is somewhat pitted on face.

It appeared on palms or soles or both in 17 cases out of the 21. Pustules changed to crusts on an average in about 24 hours. Among the nurses there were very severe prodromal symptoms in three out of four, Temp, ranging from 103 to 106. In the 4th case, no prodromal symptoms and the only ones were slight headache and the appearance of a mild but characteristic eruption.

All cases among nurses were comparatively mild after the prodromal symptoms except in one case who had been vaccinated three times but not successfully. The first time a year preceding the attack, again two months preceding and during the prodromal symptoms. In this case the eruption was more severe but was not attended by marked malaise after the prodrome.

The eruption in all the successfully vaccinated cases was mild without exception and in the unvaccinated severe.

In the vaccinated cases desquamation was complete in 10 to 19 days and in the non-vaccinated 20 to 53 days.

Quarantine in a detached hospital was very rigid. The food was carried by one of the nurses from the general hospital and placed in dishes on a table about 25 feet from the building. The dishes had been sterilized in boiling water and the table wiped off with a 5 percent carbolic acid solution. In no case did the nurse from the general hospital come in contact with the dishes or the table.

One nurse from the general hospital did this duty from June 13 to June28, when she complained of vomiting, headache, backache, dryness in the mouth, etc., and the malaise continued with lessening severity until July 1st, when an eruption appeared on forehead, palms and wrists, and the diagnosis of smallpox was made. This nurse in no way came in contact with the patients in the general hospital previously mentioned, who had been removed on June 12. From this fact and from the fact that no other case developed from this source of contagion the probability that the disease was contracted in the general hospital is practically nil.

When the quarantine hospital was first opened the weather was very hot and dry, strong wind blowing from the S. W. a great deal of the time. The windows of the quarantine hospital were left open as much as possible on account of the heat. The table previously mentioned was exposed to the wind coming from the direction of the building. As the hospital stood on the edge of a bluff, the only approach was from the leeward side. Consequently, since the other sources of infection were practically excluded it seems probable that the contagion was carried by the wind.

These cases developed directly after an epidemic of chickenpox and this

fact made the differential diagnosis a very important matter. The strong differential point was the absence of rise of temperature and malaise in all the cases of chickenpox, about 30 in number.

On the contrary in the small-pox cases the morning and evening temperatures were recorded in every case. The more severe character of the eruption and tendency toward successive crops in chickenpox was also noted; there being no marked tendency toward successive crops in any of the small-pox cases.

Two of the more severe unvaccinated cases having pulmonary tuberculosis presented interesting complications.—

Case 7. Henry H. A low grade boy, 21 years of age, of the Mongolian type of idiocy, who had been steadily failing for several months.

He had pulmonary tuberculosis and had been in the hospital for some time and was very weak when he contracted small-pox.

Below is a summary of the physical examination of his lungs on March 21, 1901.

Percussion note high pitched, tubular breathing in left lung in upper lobe with areas of whistling rales towards the sternum, small cavity near sternum in the third interspace.

In the right lung dullness was not as pronounced at the apex as on left. There was however consolidation with tubular breathing in upper lobe. In the lower lobe there was dullness merging into liver dullness.

Rales heard over both lungs both anteriorly and posteriorly.

On July 3, a diagnosis of small pox was made and he was sent to quarantine hospital with evening Temp, of 100.6 and marked malaise.

The following morning Temp, dropped to 97 and he was in a very weak condition (strong stimulation). The evening Temp, rose to 102. On the second day after admission the eruption was in the vesicular stage (patient failing), developing into the pustular stage on the 3rd day. Crusts began to form on the face on the sixth day and eruption appeared almost confluent all over body and face. Desquamation on face was not complete on the sixteenth day. He was discharged on the forty-eighth day.

After the nineteenth day his temperature was about 99 in the evening with morning remissions of 98 for the remainder of the time he was in quarantine hospital during which later time his general condition steadily improved. He was detained in general hospital till Dec. 3rd, when he was discharged in good condition with the tubercular process much improved. He has not been under treatment in the hospital since, but has continued to gain on the grade. Within the past few months he has been losing in weight but as the age limit of this type of idiocy is from 20 to 25 years this condition is to be expected as He is now 24 years old.

Below is a summary of physical examination of lungs on April 4, 1904.

Percussion note somewhat dull and higher pitched in left apex, with cavity about size of quarter in mid clavicular line under first rib and few moist rales heard in this area. Hyperresonance over lower border of lung. Heart retracted from chest wall. Right lung, slight consolidation in upper

portion with higher pitched note throughout. Breathing somewhat tubular, unable to find rales either posteriorly or anteriorly.

Diagnosis—Fibroid Lung. Cavity-previously mentioned as located on left side near sternum in third interspace replaced by slight hyperresonance.

Case 2. Lydia W. Age 18 years. Epileptic who had pulmonary tuberculosis and had previously been in fair health, was sent to quarantine hospital on June 4th with slight prodromal symptoms. Eruption was in beginning vesicular stage and evenly distributed over body involving palms of hands and soles of feet. Patient was suffering marked malaise. Evening Temp. was 100. Second day after admission morning Temp. 99 and evening 98.6, patient feeling more comfortable.

There were old tubercular lesions in the apices of both lungs but for eight days temperature remained practically normal.

Eruption became generally pustalar on the 4th day, crusts began to form 6th day and on the 8th crusts were all over body and eruption was drying rapidly. On 10th day crusts were off to great extent. Patient however scratched thus delaying desquamation. Temperature rose to 101 in evening, she became restless and evidently suffered acute pain and marked malaise. Evening temperature ranged from 101 to 103 for six days. Muscular twitching around mouth and this increased in severity. Breathing became rapid and labored and restricted on left side. Dullness over upper lobe of this side and became more marked and extended to 4th rib, nipple line.

Abdomen became slightly tender and tympanitic. Stools foul smelling and light colored. Unable to find evidences of Bright's disease, urine remaining clear and light.

On the 16th day had a convulsion of petit mal type. Pulmonary symptoms became more marked and on 19th day desquamation was complete and patient could have been released from quarantine had it not been for tubercular symptoms. Morning Temp. 102.6, evening 104. On the 20th day morning Temp. 104.2, died at 3.15 P.M. Diagnosis, acute exacerbation of chronic tuberculosis.

In both cases the tubercular process was made more acute by the small-pox. The 2nd case however had epileptic seizures at last and could not be stimulated as strongly as the first and according was not able to survive.

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EDITORIAL.

CONTAGIOUS DISEASES IN INSTITUTION LIFE

When people are housed in large numbers, the question of protection from contagious diseases deserves serious consideration. The condition of intimate association favors the rapid spread of these diseases, while on the other hand the control of the population is so complete that the medical staff have an advantage in handling an epidemic over the health authorities in charge of an ordinary outbreak.

Most well regulated institutions require a certificate of recent vaccination in each case admitted, and make very careful inquiries into the possibility of exposure to other contagious or infectious diseases. Of course, exposure to cases unrecognized while enroute to the institution cannot be guarded against, but by the usual precautions indicated above, and the additional one of thorough disinfection of all clothing brought with each new arrival and the requirements of a thorough soap and water bath, the danger of in-

troducing disease from this source is reduced to the minimum. Employees, over whom the administration does not have such complete control, are the usual media for the introduction of these diseases, and even if the management of an institution should require as a condition of employment that the applicant and his clothing should undergo the same cleansing processes required of inmates, the fact of more or less frequent visitation with relatives and friends outside, involves the constant possibility of introducing bacteria.

Of all infectious diseases the spread of measles is the most difficult to completely control because of its extreme contagiousness at the first onset of the disease. Among the feeble-minded it is noticeable that the Mongolian type are especially susceptible to severe attacks of this disease. In fact, measles seems to vary in severity according to the individual, and one is never safe in predicting a light epidemic because a few of the earlier cases are not very sick.

Small-pox, thanks to vaccination, can usually be kept out. The prevalence of this disease at the close of the Spanish American war and the existence at the same time quite universally of chicken-pox, presented an unusual danger. The article by Dr. Huxley in another part of this issue illustrates an epidemic at this time, which presented some very interesting features. First, the fact of accurate diagnosis. There had been quite a number of cases of chicken-pox all of which were carefully isolated with reference especially to the possibility of mistaken diagnosis, but in no case was there reason to change the same. It is, therefore, worthy of note that a case should have been recognized at once as small-pox in which the subsequent history justified this diagnosis as well. Others followed, the histories of all of which are given in the article referred to.

The second noticeable fact is that the first four cases of small-pox were mentally low grade males that we had decided not to vaccinate because of the danger of infection, from it being practically impossible to control and protect the vaccinated arms on idiotic and low grade persons.

The next point I wish to notice was, evident infection of a few cases by the action of the wind, which blew almost continually for a week or more from the direction of the building used for the care of these cases, toward the main building. Children became affected in the wing of the main building nearest the contagious hospital, although the latter was situated about five hundred feet distant.

The thoroughness of which the process of isolation and disinfection were conducted are worthy of attention as being, in the opinon of the writer, almost ideal. Imagine a building containing about two hundred custodial boys from which a case of small-pox has been taken. These boys and their care-takers must be kept entirely isolated from the population of all other buildings on the ground as well as from outside residents. They must have their three meals a day, their clothing and bedding must be laundered at regular intervals and in case of a large percentage of the inmates it must be done daily. The delivery of food and supplies to this building must be done without any individual contact, for safety lies only in the assumption

that every person and article in the building as well as the interior of the building, is a source of infection. Likewise refuse taken from the kitchens must be buried or disinfected by final boiling. The delivery man in charge of the laundry, must take to the infected building a disinfected bag, into which is placed the bag at the building containing the infected clothing and bedding, the delivery man himself wearing a gown which had been saturated with antiseptic solution to neutralize any material conveyed through this method of handling infected material.

Then again after a sufficient time had elapsed, without the development of new cases, to justify disinfection and opening of the building, the physician in charge meets a proposition requiring heroic action. The clothing and bedding of the two hundred inmates and all their care-takers must be thoroughly disinfected. Every individual, including inmates and care-takers, must pass through an antiseptic bath which must be so thorough as to include the hair and the scalp. Every article of furniture, clothing and bedding must be thoroughly and completely disinfected and every wall and floor surface as well. The furniture, bedding and wall surface can be treated by fumigation, clothing and bedding by fumigation and boiling. This, however, must all be done with the population left in the building. To do this one story of the two story building was vacated by the population and thoroughly fumigated. Then the inmates were given their bath and transferred to that story leaving every removable article behind, after which the vacated story was given the same treatment. As during all this time this population had to be fed, some idea of the number of points of possible conveyance of contagion that had to be watched, can be imagined and it readily can be understood why the medical officer in charge had virtually no sleep or rest for thirty-six hours. It is needless to add that following this through work there were no more cases of small-pox.

Perhaps the most common of the major diseases is diphtheria. In fact, the bacteriologists have shown us that bacilli of diphtheria exist in a good percentage of noses and throats constantly, particularly among school children, whether in or out of public institutions, and this fact would seem to explain the impossibility of tracing the source of this disease in so many cases. This fact also makes it rather difficult to determine with precision how long cases with so-called infected throats should remain isolated. The presence of these bacilli alone or without clinical symptoms, does not seem to be sufficient justification for isolation, and their continued presence after clinical symptoms have disappeared may have no special significance. The use of antitoxin has shorn this disease of its former terrors, but it is nevertheless, important to properly diagnose the disease promptly in order to give the treatment in time. It is the custom in the institution with which the writer is connected, when a case develops with clinical symptoms suggestive of diphtheria, to have a culture made immediately, and if the microscope conprais the diagnosis, to have swabs taken from all throats and noses of the persons in the class from which the patient was taken and immediately isolate all that are positive, and thoroughly fumigate the departments,

clothing and bedding where these patients live. This simplifies the handling of these cases and makes it unnecessary to quarantine whole buildings. The cases removed are, of course, kept in isolation until the microscope justifies their discharge. Where the institution is provided with a laboratory equipped with incubator and microscope, and a trained bacteriologist is connected with the staff, the handling of diphtheria even in the large institution population, especially if the latter is divided into a goodly number of separate groups in different buildings, is comparatively an easy matter. It is well, however, to have the culture examination made by the health authorities at the same time, not only as a verification of the laboratory work in the institution, but to insure confidence on the part of the public.

It is gratifying to note the very general activity of the medical profession assisted by the leaders from all professions, in educating public sentiment concerning the care and treatment of tuberculosis. Of this and other infectious diseases in institutions we may have more to say later.

NOTES AND ABSTRACTS

N the Journal for Sept. 1902, page 30, was printed an abstract of an article by M. Bra on the presence of a parasite in the blood of epileptics. Recently he has reviewed the literature and brought the subject down to date. *His article acted as a stimulus for a number of observations. +M. Besta examined 125 fresh specimens and found no organism in any of them. In 375 cultures he twice found staphylococci, once coli, once tetrag and once an undetermined spirillum. He thinks that the result of Bra and Chausse are due to auto-infection and errors in technique.

Lannois and Lesieur examined the blood of epileptics during the attacks and their results were wholly negative both by cultural methods and on direct examination.

Ghiliarowsky, of Moscow, examined the blood of five epileptics both during the attacks, and in the interval, he made his examinations by means of fresh and stained specimens and by cultural methods. In five examinations he found a micro-organism corresponding to that described by Bra, in some cases getting pure cultures. His inoculation experiments were negative. He inoculated under the skin and not in the blood stream. On examining the blood of patients during and between their periods of maniacal excitement he finds a diplococcus exactly analogous to the one of epileptics, as shown by Bra, so he concludes that the micrococcus of Bra is the micrococcus agilis, and has nothing to do with the pathogenesis of epilepsy.

Tirelli and Brossa have examined a number of cases of epilepsy and have found some bodies similar to the ones Bra has described but from the difficulty in staining and of making cultures they have considered them as

*Recherches microbiologiques sur T Epilepsie. Arch, de Neurol. Dec. '05. IRicerche batteriologiche nel sangue degli epilettici. Rev. sperius. di freniatria 1902. pg. 307. Examen bacteriologique du sang des epileptiques. Soc. Medic. Des Hospitaux de Lyons'03, Nov. 3.

fragments of the morphologic bodies of the blood.

The objections of his critics, M. Bra finds, are based upon three principal points, the rareness of positive findings, the difficulty of staining, and the difficulty of getting cultures.

That the positive findings on blood examinations have been few, the author admits. This he thinks is due in part to faulty technique and again, many preparations are necessary before one is successful. Also one will fail if the examination is made too long a time after the attack. Bromides, he finds, do not produce negative findings.

That the organisms are stained with difficulty by the simple methylene blue stains is true, but they are stained easily by carbol-thionin.

That it is difficult to make cultures is true of all blood organisms. The difficulty here he thinks is due to coagulation, so in making cultures he defibrinates the blood and sows in neutral or alkaline bouillon. The growth appears as a greyish tint in the bouillon which falls to the bottom of the tube and appears as a fine greyish deposit.

In the inoculation experiments the authors have failed since they used too small quantities, 20-30 cc. often being insufficient. The virulence of the cultures varies considerably. Some of them in doses of 10 cc. will kill in 48 hours, with others the rabbits live from eight to ten months. Autopsy shows atrophy of spleen and gall bladder, and the blood of the heart shows pure cultures of the neurococcus. Vaso-motor disturbances are noted after injection of cultures. This shows itself as an ischemia of the ear. This is soon followed by a dilatation of the vessels, then again by an ischemia, etc., the changes taking place rapidly.

Contrary to his earlier conclusions the author finds that serum diagnosis is not yet practicable since normal serum will produce an agglutination.

BOOK NOTICES.

LA CLASSIFICATION DES ENFANTS ANORMAUX. DR. O. DECROLV. GAND. IU05,

The author reviews somewhat at length the various attempts that have been made to classify defectives. While realizing the difficulties of the problem he offers the following:

I. Irregulars due to intrinsic causes.

II. Irregulars due to extrinsic causes (family and social surroundings.)

In the first class he distinguishes (a) in which the irregularity or defects lies in the vegetative functions, (b) those in which the irregularity or defect lies in the functions of relation (motor, sensory, affective and mental defects).

He wishes to make his classes large enough to include all children who for want of special training would become a charge on or a danger to society.

Those in whom the irregularity exists in the vegetative functions he divides into (a) those who have physical deformities and anomalies independent of the neuro-muscular system (deformities, monstrosities, etc.) (b) those who have disturbances of general nutrition and chronic diseases of the organs of