received notice that the body had been discovered and that all this time it had been in the river. The body was brought to Baltimore, and as it was in an advanced state of decomposition it was promptly buried. It might be well to state here that when found the body had on a pair of drawers, an undershirt and a collar which was marked with his initials. The companies then came forward and claimed the right to inspect the body, at the same time asserting that the latter in all likelihood was unrecognizable from having been nine months under water. I need not go into the details of the autopsy, which was made by a prominent pathologist in Baltimore. It can easily be imagined, however, that a body which had been exposed to such conditions would have lost many of the physical characteristics peculiar to it before death. It may be sufficient for me to say, however, that much of the flesh on the face and head was gone, and this brings me to the eyes, which were submitted to me for an examination. It was remembered by his family that he had lost his left eye as a child from a blow with a stick. This eye then had been blind for many years, and I elicited the fact that it had a whitish appearance in the pupil, which no doubt was a shrunken lens capsule, probably the result of a traumatic cataract.

The question then was, if it were possible to find in the left eye anything which would indicate that the man had been blind in that eye for most of his life. The following was the result of my examination:

MACROSCOPIC EXAMINATION.

Right Eye: Cornea perfectly and uniformly opaque. This opacity was remarkable for its density and it evidently involved the entire substance proper of the cornea as well as the epithelial layers.

The cornea was sunken in the middle, and this was explained by the loss of the intra-ocular fluids, a fact revealed when the eye-ball was opened. The eye-ball was soft and mushy and its sides could be pressed together at any two opposite points, just like a collapsed balloon or bag. On opening the eye-ball there was no evidence of vitreous body or crystalline lens. The retina and choroid were not separable, but they formed a dark, indistinguishable mass that went to pieces when picked up with the forceps. These two coats seemed to be absolutely disorganized. The iris seemed devoid of pigment and was recognized as a delicate, colorless membrane, resting against the posterior surface of the cornea. This membrane, too, like the choroid and retina, was decomposed. The optic nerve was shrunken.

Left Eye: The cornea was hazy and faintly transparent over an area comprising about two-thirds of the entire surface. This transparency allowed one to see beyond, and on pressing the eye-ball at its posterior pole a grayish mass could be seen to advance toward the cornea. This mass occupied the position of the crystalline lens. The entire periphery of the cornea was opaque. This opacity was not sharply cut as to its inner borders, as is the case with the arcus senilis, but had a ragged inner edge with here and there a more marked jutting out into the clearer cornea.

This eye-ball, too, was collapsed like its fellow. On cutting open the eye-ball, both retina and choroid were found in a condition similar to that of the right eye. The iris, too, lay against the posterior surface of the cornea and appeared devoid of pigment. When picked up, this part of the eye fell to pieces. The grayish mass mentioned as being visible through the cornea proved to be a small body about the size of a grain of rice and of irregular shape and nearly solid. In the posterior part of the eye a hard substance was felt. This substance was apparently loose and lying in disorganized choroid and retina. It was picked up with the forceps and seen to be a thin sheet of what was evidently ossification of the choroid. It was 7/16 of an inch long and about 3/16 of an

inch wide, and posteriorly it was perforated by a round hole. The optic nerve was shrunken. Nothing further was noteworthy in this eye.

The striking points about this part of the examination were, 1, the dense and uniform opacity of the right cornea, and, 2, the existence of the plate of bone in the posterior part of the left eye-ball.

MICROSCOPIC EXAMINATION.

Cornea of Right Eye: Impossible to get any reliable differential stain. The tissue could be recognized as that of the cornea, but beyond this nothing could be said of its ante-mortem condition.

Left Cornea: The same want of definiteness existed as was seen in the cornea of the right eye.

Grayish mass in left eye-ball, composed of a cloudy, round large center, made up largely of bands looking like the layers of the lens. This mass was surrounded by clumps of pigment. All that could be said of this mass was that it resembled lens substance more than it did anything else. The retina, choroid and iris stained so diffusely that nothing valuable could be made out. This was the case in both eyes. It was impossible to demonstrate the existence of cataract.

The substance removed from the left eye-ball, and pronounced by me to be the condition known as ossification of the choroid, was shown under the microscope to be bone, as I had said.

It will be seen from this that while the small body, of irregular shape and about the size of a grain of rice, might reasonably be regarded as a shrunken lens the result of a traumatic inflammation, it could not of itself be regarded as positive evidence that the man had been blind for many years, for such a condition of the lens can be brought about in probably one or two years. With the discovery, however, of the plate of bone there was immediately obtained unmistakable evidence that the man had been blind in that eye for many years before his death. In those cases of ossification of the choroid which I have seen, the patient had been blind from early childhood. This conclusive proof then that the left eye had been blind for a long time, was evidence enough in the opinion of the insurance companies to establish the identity of the body, and the money was paid.

It is clear from all this that the microscopic examination of an eye which has been exposed to such conditions reveals nothing of any value, owing to the post-mortem changes in the cell structure. Indeed, the disintegration of the various parts of the eye is so far advanced that it is impossible to draw any conclusions as to the ante-mortem condition, even as to the color of the iris. The effect of the water on the eye for so long a period was to completely obliterate ante-mortem characteristics, with one exception, ossification of the choroid. There was present in this case then, the only ocular condition which would have been valuable in establishing the identity of the body.

MEASLES AND THE EXANTHEMATA.

SHALL CHILDREN BE KEPT THEREFROM? LIKEWISE FROM DIPHTHERIA AND PERTUSSIS.*

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It might be stated as an axiom, that as long as a child does not have a disease, it can not die from it; and the first step to prevent such a death, is to prevent a child from acquiring the disease. Hence, we have now in nearly all the states quarantine laws that prevent largely the spread of all contagious diseases, and this

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is certainly, in the vast number of cases the proper thing to do, namely, prevention is much better than cure, at least for the patient, if not for the physician. There is one element in many of these diseases we can not control, namely, the epidemic element; but in a municipality placed under strict health laws, put into ideal sanitary conditions, even the epidemic element will thus be largely modified. Could these ideal sanitary regulations be everywhere enforced, and always exist, then it were worth while to quarantine against everything to which the least suspicion of contagion is attached, even such mooted diseases as consumption, cancer, typhoid fever, cerebrospinal meningitis, and many more whose status is not yet fully defined. But I have thought a great deal about the matter; if it is with as good a show of reason that we keep our children from measles as we do from rtheln, varicella, variola, scarlatina, diphtheria and pertussis, and to this purpose this paper is dedicated.

I have no desire to say anything for the purpose of evoking useless criticism or captiousness, or to be in anywise pyrotechnic or make a display of being queer or finicky, but to honestly make an inquiry whether we are acting wisely or not.

I shall hold that it is not always best to keep our children from acquiring measles, at least not with as good a reason as we have for preventing their acquiring such virulent diseases as scarlatina, variola or diphtheria, for the following reasons:

Rtheln and varicella may at once be dismissed, as it matters little whether a child has them or not, as neither is ever fatal, only chicken-pox may leave a few disfiguring scars, or even blindness in some remote cases by a scar remaining on the cornea in the pupillary axis of vision.

Now, we have weighty reasons as to scarlatina. First, because it is always a dreadful disease that not only kills thousands of our children, but no one can ever tell what fatal or troublesome sequel or complications it may have with it. Many children who do not die outright, may afterward have diabetes, Bright's disease, or paralysis of one or more limbs, from which they may die after lingering illness, or remain hopelessly diseased all their lives.

Also, another reason for quarantine against scarlatina is that this affection is not likely to be acquired after one has reached adult life, and even if acquired, runs usually a much milder and less complicated course.

While diphtheria is not an exanthem, I should like to include it in my list of diseases, and will just mention that what I have said of scarlatina is largely true of it, with the exception that since we are using diphtheria antitoxin, it is not so fatal a malady as before.

In variola we have at all times of life a dangerous, loathsome malady, which has a large mortality, with intense suffering to the afflicted one, and even those who recover are forever horribly disfigured on account of the ugly pockmarks it leaves. So terrible is this pestilence that we are not only content to quarantine against it, but in this case we fight fire with fire; we substitute another disease for it, namely, vaccinia, by vaccinating ourselves with the virus of cowpox, and though this is by no means a pleasant disease to have, yet we prefer it to its horrid analogue, one of the scourges of mankind. And here we have a hint in fighting the measles of adult life, always a dangerous affection, by substituting the measles of childhood, which is less dangerous.

While pertussis is not an exanthem, I desire to mention it because it comes under my line of reasoning also, for we know this often proves not only a long and tedious malady of childhood, lasting, according to the season of the year, from three to seven weeks, and often longer, but is in early life very fatal, and frequently accompanied by complications, such as pneumonia, bronchitis, pleurisy, emphysema and others, and often when recovered from leaves the child weak and of frail constitution, making it an easy prey for other diseases. Again, as in some of the others mentioned, adult life, while not entirely exempt from it, does not become so easily affected, nor is the mortality nearly so great nor do adults easily acquire it, if exposed thereto.

Now, premising that these foregoing statements are true or as nearly so as we can gather from our varied experiences, and a summary of the knowledge we can obtain from our most reliable sources, let us see whether the same reasoning holds good as to measles, or whether we can show good reasons for a different or modified course.

That measles is always to be regarded seriously on account of the possibilities with which it is surrounded or associated, no one can successfully deny. The mortality from this affection in the aggregate is great, but mostly during adult life, and that it is often associated with ugly complications we all must admit, also the same is true of some of its sequel; are they not principally true during adult life? I do not mean to obtain your assent by begging the question, but by suggesting your assent or denial according to your varied experiences. Many epidemics of measles are so mild, especially during the warmer seasons, that the majority of those sick, if children especially, never go to bed, but remain outdoors and play, and scarcely show any signs of distress. When a mild epidemic shows its character, why not expose all children above 2 years and under 12 to 14 years to it? Measles, ever so mild, is prophylactic against any future exposure, as much or more than vaccinia is against smallpox. Whatever phase measles exhibits during childhood, we will all admit that generally it is very severe among adults, causing a great mortality *per se*, and still greater on account of its complications.

It is true the hygiene of prisons and camps, as well as other places of detention such as the various hospitals, is to-day more perfect, yet much is to be desired, and we know that if measles breaks out in such places, especially among adults, the mortality is usually great and the epidemic hard to manage. But my observations on a large number of epidemics, it is true, in Iowa, where we have small cities and many small country towns and rural districts, have invariably shown very light mortality among children under 14 and a much greater number of deaths among the adults. It is undeniably true also that the very young, say under 2 years of age, also bear the disease very poorly.

In the discussion before us, of course, much must be considered. I think the disease should always be quarantined against in children's hospitals, in private schools, in severe winters, and in the unsanitary districts of crowded tenement wards or other unhealthy communities, since in these cases complications are easily evoked, especially tuberculosis following the disease as a sequela. But when we can expose children in ordinary health to a mild epidemic of measles, there would probably be the same gain as we experience in the substitution disease of cowpox for smallpox.

Even in an epidemic recently observed in a small rural community, where there were 68 cases of measles, no one under 15 years of age died, but 3 adults died out of 23 cases over 25 years of age. This epidemic is a fair sample out of many I have observed in rural districts, villages and small towns from 2000 to 30,000 inhabitants.

In case the susceptibility to acquire measles diminished much, as adult age is reached, it would be more worth our while to quarantine, but such is not the case; adults are just as likely to acquire measles as children, when exposed to the contagion or an epidemic, and when acquired become usually more dangerous. I am aware that while I had my experiences with thousands, there are those here who have had theirs with tens of thousands, yet I hope that no javelins will be thrown on account of the difference, rather if my suggestions appear weak before the strong let them deal kindly with the erring, and thus show us the better way. There is, however, a margin always in favor of quarantine, and that margin is the doubt in diagnosis. Until that is fully established, while we fear a case of measles or varicella may be scarlatina or variola, a mistake that not only happens to the neophyte but to the oldest veteran in practice at times, it is best not to allow patients to come in contact with others.

I now submit these few premises for your conclusions, and trust you will accept them in the spirit offered, namely, let our contentions be in quest of truth, and the greatest good for all. Undoubtedly your varied experiences may cause you to differ as the parallax depends on the different stations occupied by different observers viewing the same object. One may see the same shield black that another sees white and if it were turned, opinions as to color would change. As for me I am glad I had the measles when I was a child, and so are all of you who are in the same boat.

ROETHELN.

ITS DIFFERENTIATION FROM MEASLES OR SCARLET FEVER.*

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It is very difficult, even from a historical standpoint, to accept a description of an epidemic, exanthematous affection of a century ago and try to adapt this description of disease to what we see to-day. Our point of view is entirely at variance with that of observers of an early clinical school. With such a disease as roetheln or rubella our confusion is more marked if we study the epidemics of this disease described by Hildebrand in 1832, Heim in 1812, and Forney in 1784-1796. It is not surprising that such a writer as Jurgensen is thrown into doubt. It would be well if we should reject all but the most modern descriptions of epidemics of roetheln, as these modern writers can be more easily understood by us to-day. We do no injustice then to older, or we may say to antiquarian, historians; their descriptions are obscured by lack of accurate clinical methods. Even in such simple matters as the description of an eruption, its location and characteristics, with roetheln, the lack of explicit and modern description, in older writers can only be appreciated by any one who will study the history of this disease. As far back as the 18th century we find

descriptions of a disease which often accompanied or occurred, as it were, on the outskirts of epidemics of measles and scarlet fever. Though resembling cases of both diseases, they could not be classed as belonging to either of the well-known exanthemata. The early descriptions of this disease are marred by bitter polemics, some physicians contending that they were in the presence of a distinct disease, roetheln; others, that the disease in question was but a mild measles or scarlet fever. To-day we find such observers as Henoch and Jurgensen still in doubt as to the entity of roetheln.

These are the considerations which have induced the writer to present his views on this subject. He agrees with Trousseau, Cheadle, Thomas, Baginsky and Eminghaus, that roetheln is a distinct and definite disease, independent of measles or scarlet fever. It has a distinct semeiology, and can to-day be differentiated especially from measles or scarlet fever. Trousseau describes under the heading of roseola, rubeola exanthema fugace, a disease which he places in the same relation to measles or rubeola that varicella holds to variola. He describes the exanthem, lays stress on its evanescent character, its characteristic location, the absence of affections of the mucous surfaces—conjunctiva, nasal passages, and lungs—and the absence of any sequelæ or complications. He calls attention to the fact that an attack does not prevent subsequent attacks, nor protect against measles. It occurs epidemically and is contagious. Thomas¹ gives the most modern, and to me a very classical, description of some epidemics of roetheln which he has observed. His descriptions, to which I will freely refer, have done much to place the disease on a firm, independent basis. He describes two forms of exanthem, the small and the large papular. He describes minutely the appearances, if any, on the mucous membranes, the temperature and course of the disease. Eminghaus² also describes an epidemic of roetheln and concludes that it is a disease sui generis. His descriptions are not as definite nor as simple and classical as those of Thomas. In the transactions of the International Congress at London, 1881, a full discussion of the position of roetheln to the other exanthemata took place. The disease was discussed by various leading authorities of the times, most of whom are living to-day—Cheadle, Shuttleworth, William Squire, Kassowitz, Baginsky, Jacobi, and Lewis Smith. Smith's description of a New York epidemic is particularly full and definite. The consensus of opinion was that roetheln, rubeola sine catarrho, rubella, was a disease, giving no protection from measles or scarlet fever and distinct from them. Returning to the textbooks, Barthez and Rilliez, 1861, acknowledged the great difficulty in distinguishing between roseola and rugeola—measles. They place more reliance on the absence of marked general symptoms than on characteristics of eruption for a diagnosis. Kaposi (1887) is inclined, with Hebra, to look on roetheln as a mild or anomalous form of measles, and denies its right to the dignity of a distinct disease sui generis. He cites Kassowitz, who at first disapproved the view that roetheln was a distinct disease, but subsequently observed an epidemic which caused him to rather support the view of its being a disease distinct from measles or scarlet fever. Gerhardt, in 1881, believes that roetheln is distinct from measles or scarlet fever, though he admits that roetheln occurs epidemically with measles. Gerhardt mentions the school of Shoenlein, which regards

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1. Jahrb. f. Kinderheilk., 1869.

2. Jahrb. f. Kinderheilk., 1871.