

pleural cavity, ovarian pregnancy, and macerated abdominal fetus with gangrenous sac.

PREVENTION OF DEAFNESS.*

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Preventive medicine is so much the order of the day that no apology or explanation is necessary for presenting this paper before this Association. Public health officials have done wonders in the control of infectious diseases, and in this way preventing deafness secondarily; but much more should be done solely for the preservation of hearing. The eye men have accomplished great good in the prevention of blindness by educating the public and arousing the general practitioners and midwives to the importance of the prevention of ophthalmia neonatorum, and its untoward result, blindness. The otologists likewise have a duty which they owe to the public in guarding this important sense of communication of the higher centers with the outside world. When sight is lost, as a rule, no other cerebral center is affected, but when hearing is lost, in infancy, before a vocabulary is formed, speech is also wanting, giving us the sad picture of deaf-mutism. This affection not only deprives them of means of earning a livelihood in the world, but also robs them of the social pleasures to which they are entitled. One has only to look into the face of a deaf person to appreciate the mental depression which goes with the loss of the sense of hearing.

Deafness is a relative term, and this affliction varies from what is termed "hard of hearing" to absolute deafness. Nature is so provident to us in reference to this important and delicate sense that we normally possess several times more hearing power than is required for our ordinary needs. In prehistoric times, when man had to protect himself in tribal

warfare, and also from the beasts of the forest, his hearing was none too acute. This generosity in the endowment of hearing is a disadvantage in one way, for the patient's attention is seldom called to his defect till it has reached a stage where arrest of the condition is difficult, and a cure almost impossible. Hence the importance of a systematic examination of the ears not only of school children but of adults. In adults tinnitus is often the first symptom complained of, and the accompanying deafness is discovered by chance. Every aurist appreciates the unsatisfactory results attending the treatment of this condition in combination with deafness. It is much easier to prevent deafness than to cure it.

The organ of hearing may for convenience be divided into an external, middle and internal ear. For our consideration the middle ear is of the greatest importance, while the external ear is of the least importance. Permanent deafness is seldom caused by conditions in the external ear, though foreign bodies, including wax, and exostoses, may at times interfere with sound vibrations reaching the drum membrane. The middle ear contains the ossicles which form a chain of communication between the vibrations of the tympanic membrane and the internal ear at the oval window. Connecting the middle ear with the naso-pharynx is the Eustachian tube. This tube serves to drain and ventilate the middle ear, and is normally opened in the act of swallowing by the automatic contraction of certain small palatal muscles. Anything which interferes with the entrance of air into the middle ear has a harmful effect on the structures in that region. Hence the well known law: "Anything that interferes with the normal tension existing between the membrana-tympani, ossicles, and the contents of the oval window, will cause tinnitus and deafness."

The internal ear or labyrinth consists of the cochlea, vestibule and semi-circular canals. It is concerned in both audition and equilibrium. The internal ear is so delicate that nature has placed it within the hard substance of the

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petrous bone to better protect it from external injuries. It is still exposed to systemic poisons in the circulation, as in syphilis and quinine. On account of its proximity to the middle ear and meninges, suppuration in these regions readily extends to the labyrinth and gives us "nerve deafness," the most hopeless form of deafness.

For the purpose of this paper it seems advisable to divide all deafness into two forms, congenital and acquired. Many cases which were formerly classed as congenital are now known to have been acquired in infancy. Sheppegrell, in his careful investigation of the subject, reached the conclusion that one-third of the cases of deafness are congenital and the other two-thirds acquired.

From a preventive standpoint, the acquired ones are of the greatest importance, for it is here that the general practitioner and special practitioner can, by working hand in hand, render the greatest service to mankind. To my mind there is no one cause so productive of defective hearing in children as adenoids. This lymphoid structure is situated, as you well know, on the vault of the pharynx, in close proximity to the mouths of the Eustachian tubes. They not only prevent ventilation of the tube and ear, but also, when inflamed, become a fruitful source of infection, which readily extends along the tube to the middle ear, giving us an attack of acute otitis media. The passage of bacteria to the middle ear is especially easy in infancy on account of the shortness of the tube and its relatively large size. This inflammation, if not arrested, may not only extend to the mastoid cells, but may also involve the internal ear or the meninges of the brain. It not only endangers the organ of hearing, but endangers life. Balinger was not far wrong when he said 66 per cent of middle ear diseases are due to adenoids. It is not necessary for adenoids to cause mouth breathing, though they usually do, if carefully inquired into, but they are harmful on account of their harboring infection and preventing ventilation and drain-

age of the Eustachian tube and middle ear. The operation of adenoid removal is so nearly free from danger that we should advise it on the slightest symptoms. General practitioners at times are a bit prone to wait for the symptoms of mouth breathing before taking steps for their removal. This is only one symptom of harmful adenoids, and is not the most important. The ears can be seriously and permanently damaged when the adenoid is so situated as to infect the middle ear or prevent its ventilation, without the common symptom of mouth breathing. In the removal of some of the largest adenoids by the author, mouth breathing was not a symptom.

The appearance of the ear drum in this condition is so characteristic as to well deserve the description, "Adenoid Ear." Diseased tonsils harbor infection, and likewise cause obstruction of the tube by pressure of the upper lobe of the tonsil, and must be thoroughly removed. Other important causes of acquired deafness are the acute exanthemata, scarlet fever and measles heading the list. Smallpox in times past was a fruitful source of deafness, but, thanks to preventive medicine, vaccination, it claims few victims at the present time. Typhoid fever and diphtheria are also better treated and controlled, to the saving of many organs of hearing. In all the acute exanthemata, particularly in children, the ears should be regularly inspected, and when the condition requires it, the drum membrane should be fully incised to permit drainage. It is most unfortunate when the first symptom of acute otitis media noted by the family physician is a running ear. Not only permanent damage to the organ of hearing, but also mastoiditis and meningitis may be prevented by timely incision of a drum membrane. Another mistake that is sometimes made is in ignoring a running ear in the delusion that the patient will *outgrow* it. In this connection it might be mentioned that no first-class life insurance company will take the risk of insuring a patient with a running ear. In speaking of otitis media in connection with

the acute infectious diseases, it is now a settled fact that the ear complications are far less frequent and less severe when the patient is rid of his adenoids. The writer, about a year ago, removed the adenoids from a boy of six, who had the night before, for the first time, been exposed to measles. The child eight days after operation came down with measles, but during his illness had no ear complications, not even a slight earache. This prophylactic measure is not advised as routine, but is suitable in certain cases of definite exposure to measles and scarlet fever.

Influenza, pneumonia and whooping-cough may cause deafness through infection of the middle ear. The only prophylaxis is incision of the drum membrane at the right time.

Meningitis may cause deafness of the worst kind, usually through infection of the internal ear from the meninges. In the cerebro-spinal type of this disease, Flexner's Serum should be used promptly.

Tuberculosis of the middle ear, which we so frequently have in our city, is very difficult to prevent or cure. Mumps cause deafness by attacking the internal ear. It is very serious, but, fortunately, this complication is rare. Such drugs as quinine and the salicylates, including aspirin, should be given with caution, as *excessive* doses may produce a form of nerve deafness.

Syphilis may cause deafness by involving the nerve or labyrinth in the early stage of the disease, or it may occur late in the disease. It is also a cause of congenital deafness; at least the inherited deafness occurring during infancy or childhood. The preventive measure is salvarsan, or neo-salvarsan, followed by mercury and the iodides, controlled by the Wasserman reaction. Some excellent authorities speak of the harmful effect of salvarsan on the already affected auditory nerve, but the weight of evidence is in favor of its use as less dangerous than the spirocheta-pallida.

There is another form of deafness occurring particularly in adults, known as dry catarrh of the middle ear. It is often accompanied

by ringing and noise in one or both ears. Unfortunately when these symptoms appear the disease is already well advanced. This condition of the ear is often associated with so-called catarrh of the nose, caused by a nasal obstruction, due to a deflected septum or enlarged turbinates. The ear lesion is so frequently on the obstructed side that it can hardly be a mere coincidence. The removal of the cause is surgical, though we should not be too optimistic in our promises to relieve the ear condition. We can sometimes improve the ear symptoms, and frequently arrest the progress of the disease. It would have been far better had normal respiration been previously established and this unfortunate train of symptoms prevented.

The entrance of water into the middle ear through the use of a nasal douche, or in the act of swimming or diving, is most harmful to the organ of hearing by causing acute otitis media. So potent for evil is the nasal douche in the hands of patients that in my judgment it should be very exceptionally prescribed. Patients should also be cautioned as to the danger of the entrance of water into the middle ear. Particularly is this the case in sea bathing, where the strong salt water seems most irritating.

Finally, I shall take up congenital deafness, which offers to the physician a less promising field in the way of prevention. MacKuen estimates that more than 50 per cent of the cases of congenital deafness are due to consanguineous and deaf-mute marriages. This being the case, physicians should strongly advise against such unions. It may be necessary in the future for laws to be passed to prevent such marriages. In the absence of such a law, the two sexes should not be brought together at our deaf and dumb institutions during the marriageable age.

I wish to emphasize in conclusion the following facts:

1. Deafness is largely preventable, but is difficult to cure when well established.
2. The most fruitful cause of deafness is

the presence of adenoids, which should be removed without waiting for the symptoms of "mouth breathing."

3. The presence of adenoids complicates the infectious diseases and increases the danger of ear infections.

4. In acute inflammations of the middle ear the drum membrane should be early and freely incised, and running ears should not be neglected.

5. Congenital deafness is due principally to consanguineous and deaf-mute marriages. This should be discouraged by the physician, and if necessary, prohibited by law.

DISCUSSION.

Dudley S. Reynolds, Louisville, Ky.—I thought I understood the essayist to say quinine and aspirin in speaking of deafness.

Dr. Greene: In excessive doses.

Dr. Reynolds: I want to say a word about the salvarsan treatment. Is it a cure of syphilis? I have seen a score of cases of relapses. It may have some value in some stages of syphilitic affections, possibly curative in the earlier stages; it is not curative in the advanced stages. I have seen so many cases of syphilis in persons who had used salvarsan that I have lost confidence in it. I have had occasion to know something about syphilis. I had the good fortune to take instruction with Fournier and Cornil, of Paris.

As to syphilis in all its stages, and especially if chronic, the records there are so great as to establish rules and principles in pathology and therapeutics.

I feel sure there is no known method by which syphilis can be cured, in the sense of being stamped out from the human system. Many gentlemen in the profession believe mercury is an antidote to syphilis, an absolute cure. They have only to have a little experience in practice to find how fallacious that is. One of my neighbors with a pretty large practice, not especially in syphilitic diseases, but in neurotic people, believes there is no scientific place for iodide of potassium. That shows he does not see cases of syphilis in the mucous membrane or in the skin. I do not know anything that melts away quicker than an ulcer of the pharynx in syphilitic patients treated with iodides. Some may take iodide of sodium, others the iodide of strontium, others may take iodide of ammonium. The question is, since it is the iodides that do the work, if it is not better to give the hydriodic acid. Do not give your patient a concentrated preparation of iodine; you do him mischief, you make it impossible to secure the therapeutic effect desired. The old-fashioned practice of having a saturated solution and beginning with so many drops in so much water is also a very fallacious way of giving iodides. You want your iodide largely diluted with water. If you can get the patient to take it in a pint of water at short

intervals, two or three hours, you prevent irritation of the kidneys. The reason Dr. Pope opposes the use of iodides in the treatment of syphilis is to be attributed in some measure, I think, to his unfortunate experience with large doses and concentrated preparations.

Take a half gallon of lithia water, containing half a drachm of iodide of potassium, and have him take a large glassful every two hours.

Have Horlick's malted milk or fresh cow's milk taken after each dose of the medicine to prevent the bad taste and sometimes the nausea.

Concentrated solutions of iodides are to be avoided in all cases. Nothing is more important in the treatment of advanced syphilis than the systematic exhibition of fluid nourishment immediately after each dose of iodides.

I would hate to try salvarsan in a debilitated subject or in cases of chronic iritis, interstitial keratitis and in aged persons.

Wm. S. Manning, Jacksonville, Fla.—I remember some deleterious effects of salvarsan. The patient had suddenly gone deaf over night. I watched that case for three or four months. Apparently he is almost stone deaf, without any prospect of recovery. Since then I have seen other cases very nearly similar. They appeared as chronic otitis media catarrhalis. The cases appeared to have been made deaf by the salvarsan.

U. S. Bird, Tampa, Fla.—I have heard of some cases like that, while I was in Philadelphia, in which the salvarsan had the apparent effect of totally destroying the hearing. While there I was shown experiments in which white rats were used. It was proved by a long series of experiments that it had a marked selective, deleterious effect on the labyrinth. That, of course, is collateral evidence. What effect it might have on people we have yet to find out. I very much enjoyed the doctor's paper. There is one point he did not lay stress on, that is, in any case of sickness of children it is well to carefully and continuously observe the ears. Several times I have been called in, in which there was restlessness, nothing definite, a complaint of possible stomach trouble, some fever. In these cases I have found on opening the drum membrane the ears had a purulent discharge.

Richard M. Nelson, Atlanta, Ga.—As opposing what seems to be the universal experience as to the damaging effect of salvarsan on the auditory apparatus, it may be interesting to mention a case that came under my observation in which a decidedly beneficial effect was obtained. In 1911 while at the head of the eye and ear clinic, Colon Hospital, Cristobal, Canal Zone, I was called in consultation with Dr. Zeiler, the physician in charge of the medical clinic, to examine the ears of a Spanish patient in one of the medical wards. The ear drums were normal in appearance, yet the patient did not hear anyone of us, even when we almost shouted. At this distance, and after such a lapse of time, I do not recall the exact findings on functional tests with tuning forks, etc. Except that the Wassermann test having been positive and other objective signs of lues being present, the diagnosis of syphilitic involvement of the labyrinth was ventured. We felt no hesitation in giving salvarsan, feeling we could not make his

hearing any worse. A week or ten days after salvarsan administration hearing was normal.

Ehrlich himself declares that often not enough salvarsan is given; that many eye and ear or other symptoms following its administration are due not to the remedy but to the disease. More salvarsan is his recommendation in such cases. Dr. Roy, of Atlanta, in a discussion at a meeting of the American Medical Association two or three years ago mentioned the case of a medical student, referred to him after an administration of salvarsan, who not only was almost, if not quite, totally deaf as a result, but whose condition in this respect was unchanged six months and even a year later.

The foreign literature especially has abounded in the mention of such untoward effects, while, on the other hand, the experience in the case I have described is apparently almost unique.

L. A. Blize, Tampa, Fla.—I have had but two cases come under my observation where salvarsan was given where there was complete loss of hearing. The internal ear was absolutely dead. Those cases have never regained their hearing. I, as a rule, believe in salvarsan. It is not always because we give salvarsan, but because we do not give sufficient. I think the disease is worse than the remedy.

Some ten years ago, before we had the salvarsan, I had a patient with iritis. While treating him he came in with facial paralysis. I said, "Hello! what is the matter with you?" He said, "I can't hear you." Connected with the facial paralysis there was a complete paralysis of the auditory nerve. The man was totally deaf. I did not give him a very bright outlook. He seemed very much discouraged. He couldn't communicate with his friends. I suggested that he go to New York and see Dr. Whiting. He gave him the same opinion. He did not think there would be any restoration of hearing. That was ten years ago and that man is totally deaf today. I mention this to show that there are two sides to this question. Because of a possibility of this condition developing there is no reason of not giving the remedy. I do not think papers like the doctor's can be too frequently read. The general practitioners are the ones who should hear them. They are the ones who first see the patients and tell them to go and put some sweet oil in it, or other simple remedies. The result is, when they come to the specialist it has reached a point where it is impossible to accomplish a great deal. As the eye men through the country and in societies have encouraged the prevention of ophthalmia neonatorum, I think it is in line that the same efforts be made for the prevention of deafness in children. The public should be educated along those lines, and until it is done the specialist will be up against as bad a trouble as he is today in controlling ophthalmia neonatorum.

W. Likely Simpson, Memphis, Tenn.—Along the line of prevention of deafness I would like to emphasize the good effect of early mastoid operation. There are many mastoid operations left undone or deferred to a later time because all of the typical symptoms of mastoiditis are not present. One of the main reasons for operating early is the prevention of loss of hearing.

A word or two about the use of salvarsan. A

short time ago a man came into my office with a history of syphilis. Soon after the formation of the primary sore he had two doses of 606. He came to me with a history of having had tinnitus, having been dizzy and the hearing badly off five or six weeks previous. When he came to me he was getting worse and when I examined him he had no hearing in the left ear and no response to the caloric test in the left ear and an absolutely deaf ear and the turning test negative. In the right ear he had a little remnant of hearing, very slight nystagmus on turning to the left and a very little nystagmus with the cold water test. These tests were made seven or eight months after the giving of the 606. To me it's a question whether these symptoms were due to the 606 or the syphilis, but it seems to me it was probably due to the syphilis and insufficient 606. I had a talk last night with Dr. Martin, of Hot Springs, discussing this very type of cases. He is of the opinion that they are due to insufficient 606. There is no reason why we should be able to cure all of these cases with one or two doses; it may take ten or a dozen. Ehrlich and others at the International Congress at London stated that the giving of 606 had nothing to do with these internal ear troubles. Beck, of Vienna, says some of these labyrinthian affections are probably due to the 606, and has discussed this very point at length. He says the early loss of hearing a very short time after the 606 is given is very similar to the Herxheimer reaction which one may see after a large dose of mercury. The later labyrinthian symptoms are probably due to the syphilis.

Horace T. Aynsworth, Waco, Tex.—There is no doubt an early mastoid is a point we do not sufficiently emphasize. Epidemic cerebro-spinal meningitis we had as an epidemic in Texas. In giving the serum, in more than one instance, we had profound deafness immediately following the injection. Those cases, as far as I know, have not recovered their hearing. Just what the cause was and how related to the analogous action of giving 606 I do not know. In regard to the 606 in deafness, my opinion, from the reading of the literature, was like that of Dr. Simpson's statement. It was due to deficient doses rather than to the 606. Some time ago Dr. Charles E. Perkins wrote a lengthy article reviewing all the literature on this point. He said it was absolutely unproven and not to be expected that 606 was injurious at all to the ear. In that same issue E. R. Carpenter emphasized the same thing as to the eye. In talking to Dr. Martin he told me the same thing he told Dr. Simpson. The point that was particularly brought out was that Dr. J. Gordon Wilson, of Chicago, is doing the same thing in reference to white mice. He mentioned the fact that he used soamin instead of 606. It was very destructive to white mice.

There is one form of deafness that has not been touched on today, otosclerosis. We know there cannot much be done for this. A friend of mine in Texas, Foster, has been doing a little original work along this line. He assumes it is due to a deficiency in certain internal secretions, and so he has been using suprarenalia hypodermically. He gives two minims of 1:1000 solution the first day. He repeats every day, increasing the dose one drop

a day until he gets a prolonged rise of blood pressure. He claims to have treated several cases with most happy results. I do not believe he would make a mistake in his diagnosis of cases.

The paper the doctor presented is certainly a very timely one. While we all might emphasize particular points, as a whole it could not be improved upon.

J. W. Jervey, Greenville, S. C.—I did not get in to hear Dr. Greene's paper. I have looked it over with his consent. There are one or two points I would like to add. He has referred to the fact that the deafening of the ear is so often as to be very significant on the side of nasal obstruction. I think the first man who pointed this out was a Charleston man, Dr. W. P. Porcher. He became more or less of an enthusiast on the subject. He brought it to my attention, and I think the explanation of the situation is very simple. If you have an obstruction in the ear, whether a septal excrescence or a hypertrophy or what else, you have a deflection of the air current from the normal direction. The air current during the process of inspiration does not impinge normally upon the pharyngeal wall. Irritation results. The explanation is purely a mechanical one. In these cases I try to make it a rule to re-establish the normal direction of the inspiratory current. I think I have seen good results from that procedure.

In regard to the administration of drugs being followed by deafness, I had a very peculiar experience. Shortly after I first attempted to practice a specialty I was confronted, about fifteen years ago, with the case of a lady who walked into my office absolutely deaf, as deaf as a post. A cannon shot off would not have had the slightest effect on her auditory perception. And it turned out that she had been given ten grains of sulphate of quinine the night before. Before that, according to her testimony and the testimony of her family, she had perfect hearing. Nothing had occurred except the administration of ten grains of sulphate of quinine. She woke up the next morning absolutely deaf. That cannot be used as an argument against the administration of quinine where it is indicated. I remember I thought to myself: If this is a sample of the things you have to go up against, you had better go into some other specialty.

A Member. How long did that persist?

Dr. Jervey: It persisted to the present time, as far as I know.

Dr. Greene referred to the danger of sea bathing. My understanding of sea bather's ear is that it is usually an infection of the canal. It is entirely an external ear affection, causing usually a circumscribed external otitis. Those persons who have the drum membrane perforated are easily affected by the sea water, of course, for there is no physical obstruction to the entrance of the sea water into the middle ear. In one where there has been no perforation of the drum membrane I do not think it is probable that the sea water would get in the middle ear through the mouth. Sea bather's ear is the danger accompanying external otitis and not a middle ear affection, except where the middle ear is exposed through a previously existing perforation.

The most important thing is the prevention of deafness by the removal of adenoids. Dr. Greene has not gone far enough. I think I was the first man to call attention to the importance of the occurrence of pathological conditions in the fossae of Rosenmuller consequent upon the presence of adenoids. Several years ago I described the occurrence of these conditions and my method of removing them. I think that if you will all look into the nasopharynx of the patients you operate on for adenoids, unless you have taken particular pains to clear out the fossae on each side, you will find subsequent to the operation the formation of webs, like the webs of a duck's foot, fibrous bands and lymphoid processes, which interfere seriously with the working of the Eustachian tubes.

I said I was the first to call attention to the fact. On second thought I withdraw that. Eight or ten years previously it seems Dr. Wendell Phillips, in New York, had reported one case bearing on that subject. And Dr. Miles also reported one case ten or twelve years previously. After that it seemed to fall flat. I did not know of those articles at the time, anyhow.

So frequent is the formation of these fibers that I have adopted the plan of investigating every case of pharyngeal trouble that comes in my hands for that particular condition. It is very easily broken up and the results are often astonishing, even in those cases where deafness has advanced from catarrhal conditions to a point one would think he was unjustified in promising benefit. That statement is based not on one, two, three or four cases but on the experience of upwards of one thousand cases in the last seven years. So much have I been impressed with the importance of taking care of these conditions that appear in the fossae and in the Eustachian canal that I introduce my fingers and invariably break them up. Where you have the adenoid formation bound down on each side and tied to the wall of the Eustachian tube you cannot insert an instrument to remove the adenoid without pressing back the adhesions. In doing so you are forcing back the entire adenoid mass. If you put your finger there, you can remove it with one sweep. And I want to emphasize the importance, in addition to what Dr. Greene has said, of keeping the fossae of Rosenmuller clean and allowing the Eustachian canals to functionate normally.

J. B. Greene, Asheville, N. C.—In a paper of this kind it is very difficult to cover every condition, though Dr. Bird mentioned a very important one. Every case of a sick child, particularly with a fever, should have its ears examined.

With what Dr. Reynolds said about salvarsan, I cannot quite agree. I think we are all disappointed with salvarsan. At first we thought one dose would cure, then several doses, then ten or fifteen. I think it is perhaps the best treatment we have. We should not depend on it alone. I think we should follow it up with mercury and perhaps with iodides. In regard to the effect on the internal ear by the salvarsan, the consensus of opinion seems to be in favor of giving salvarsan. I do not know how we are going to determine whether it is the treatment or the disease that causes the deafness, with all due respect

to some Vienna ear men who hold it is harmful in particular cases. I do think the literature of the subject all bears me out in considering salvarsan the best treatment for syphilis.

Dr. Simpson's mentioning the operation of mastoiditis for running ears, not waiting to avoid complications, but to preserve the hearing, I think is a good point. In unskilled hands it might prove dangerous advice.

Finally, to answer Dr. Manning's question, I did have such a case as he mentioned, coming on

six weeks after the salvarsan. I think it was due to the disease rather than to the salvarsan.

Finally, in regard to Dr. Jervy, I think strong salt water getting into the middle ear through the Eustachian tube is dangerous for the middle ear. I have seen patients frequently at the clinics in the Massachusetts Charitable Eye and Ear Infirmary on Mondays and Tuesdays following sea bathing on Saturday or Sunday.

I appreciate very much the generous discussion.

SOUTHERN MEDICAL NEWS (Continued from advertising page 24)

(Texas continued.)

At Benoit, March 21, Dr. J. C. Powell, formerly of Garrett's Bluff, was shot and instantly killed by a constable, while resisting arrest.

At San Angelo, March 23, Dr. A. H. Moore, aged 72, was gored to death by a Jersey bull.

At Dallas Dr. Harrison B. Cave was seriously injured by the overturning of his automobile. He was picked up unconscious, badly bruised and scalded.

The Fifth and Sixth District Medical Societies of Texas were consolidated April 3 at San Antonio, where the winter conventions will meet. Summer conventions will meet at Corpus Christi.

Dr. M. L. Graves, Professor of Medicine, University of Texas, Galveston, delivered the "Oration on Medicine" at the recent meeting of the Louisiana State Medical Association.

VIRGINIA.

The new State Board of Health appointed by the Governor for the various districts is as follows: First district, Dr. J. N. Barney, Fredericksburg; second district, Dr. Herbert Old, Norfolk; third, Dr. J. E. Warriner, Richmond; fourth, Dr. O. C. Wright, Jarratt; fifth, Dr. R. S. Martin, Stuart; sixth, Dr. John W. Preston, Roanoke; seventh, Dr. P. W. Boyd, Winchester; eighth, Dr. Lewis Holladay, Orange; ninth, Dr. W. W. Chafin, Pulaski; tenth, Dr. Robert Glasgow, Lexington; homeopathic, Dr. H. S. Corey, Richmond; osteopathic, Dr. E. H. Shackelford, Richmond. The appointments are for four years beginning April 1.

At Roanoke the spring epidemic of measles has appeared, 153 cases having reported in March.

At Richmond, March 31, the Board of Health adopted a rule that no milk or cream shall be sold on the Richmond market except from animals which have been proven by the tuberculosis test to be free from that disease.

Dr. J. P. Jackson, who for many years has been practicing in South Norfolk, has moved to No. 352 Bute street, Norfolk.

The State Medical Examining Board of Virginia, at a session in Roanoke, issued licenses to twenty-five applicants, one of whom had graduated forty years ago. There were only two women among them.

At Richmond the State Board of Health issues a monthly bulletin of general interest. In March it published the new rules regulating barber

shops. There are fourteen separate items in the law.

Dr. Herbert L. Old, of Norfolk, has been appointed assistant medical director of the Providence Life and Trust Company of Philadelphia.

At Tazewell the board of health, together with the city council, ordered all schools, churches, picture shows or public assemblies of any character to be closed, and that all children under the age of fourteen be kept off the streets and away from public assemblages. It also ordered all physicians to report cases of scarletina to the board as soon as discovered.

WEST VIRGINIA.

Dr. W. A. Adams, of Lauckport, a suburb of Parkersburg, suffered a broken leg and severe bruises by being thrown from his horse. The animal stepped into a hole in a culvert and suddenly pitched forward.

At Wheeling the officers of the U. S. Public Health Service have established offices and are investigating into the pollution of the Ohio river at Cairo, Pittsburgh and points between.

At Wheeling Dr. A. Taylor was arrested on a warrant sworn out by Dr. S. L. Jepson, secretary of the State Board of Health, charging him with practicing without a license. He is said to be what is called a "faith doctor."

At Charleston Dr. O. L. Aultz, city health officer, has notified all physicians that action will be taken at once against any one who attends cases of cerebro-spinal meningitis and fails to report them to him in order that steps may be taken to prevent a serious epidemic. Several deaths have resulted from the disease during April.

At Elkins, March 19, the health car which has been transported free over the trunk lines of the state with a health exhibit, was taken off of the road, as it can no longer secure free transportation.

At Charleston Dr. Aultz has complained of several different merchants for exposing overripe bananas for sale, and in each instance a fine of five dollars was assessed, the culprit being at the same time informed that a repetition of the offense would cost him \$25.

On May 6 the school of instruction for health officers began work at Charleston. The law makes it the duty of every health officer in the state to attend, and their respective county or city must pay the expenses.