

passed through the pelvic way, it will make its exit normally in the aforesaid plane (with occipital succedaneum central, if any) — I am for myself sufficiently convinced, having tested the matter many times (scores) by adequate marks and scratches on the foetal scalp, and by other proofs.* Such is the procedure when the normal is uninterfered with; and often,—for nature, while it has exceptional cases, is not apt to take to devious ways when the direct are as good or better,—a verity manifestly as hard to realize now as ever. At present the *oblique* is the thing to be sought for, and is as readily found as the cubute in former times. Many incline to it; “it has eminent authorities”; it must have its day.

But it is to be hoped that some of our number may live to see undisturbed processes of nature more thoroughly demonstrated; for nature cannot always be swerved from *rectitude*, even in the labors of childbirth.

Of a truth the hypotheses we have been writhing under so long have also had in times past their “eminent authorities” without number to sustain them; and possibly, may still have here and there a notable adherent. Nowadays, however, nature’s facts, by whomsoever brought to light, are more and more relied upon, and will at length prevail. Even under favorable mention old hypotheses are now “modified in important points,” or are cited with lethifid qualifications. Apparently they cannot hold together much longer. Indeed many of them of late seem to have been greatly frittered away. The more recent and the new will follow them in due time. Little pin-thrusts like ours may not be noticed, but even such, often repeated, may assist in the disintegration.

Within the knowledge of some of us, a colony of ants worked its way under the corner of a lofty ancient column at Athens, and so weakened the foundations that a moderate gale overthrew it and left it in ruins; in like manner may many minute perforations so riddle the crumbling forms of these empty hypotheses that some day a breath of scientific truth may readily upset and utterly demolish them.

THE USE OF SALICYLIC ACID IN CHRONIC TUBERCULOUS JOINT DISEASE.

BY ROBERT W. LOVETT, M.D.,

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THE usefulness of salicylic acid in chronic joint disease was first called to the attention of the writer by Dr. H. H. A. Beach in the summer of 1887. The case upon which the observation was made was a boy some twelve years old who had been suffering for some months from an affection of the left knee which had been diagnosticated as *ostitis* by one of the leading orthopedic surgeons of America, and the boy presented every diagnostic sign of that affection. He had suffered from chronic articular rheumatism of the ankles some years previously, and inasmuch as he had then been much helped by salicylate of soda, Dr. Beach did not apply an apparatus to the affected limb, as advised by the

* If the shoulders and the body were allowed to follow in the same direction and plane (the normal way) would there not be fewer perineum ruptures than now occur with some practisers according to their own statements?

surgeon referred to, but allowed the boy to go about with crutches, while he was given salicylate of soda in moderate doses three times daily. During the summer he was under the care of the writer, who continued the same treatment, and the knee steadily decreased in size until in six weeks it had diminished one-half an inch in circumference, while all the symptoms steadily improved. The improvement continued, and the patient is now walking about apparently well for many months. Since that time the writer has had an opportunity to observe the beneficial action of salicylic acid in a very large number of cases of chronic joint disease, not substituting medicinal for mechanical treatment, but using the drug as an adjuvant to mechanical methods. The use of the drug was begun as an experiment on cases under careful observation, and experience has led to its continually increasing use, but not until lately was it found that the drug had a remarkable influence in controlling night cries and sensitive conditions of the joints. The action of the drug administered in sufficiently large doses to children with painful Pott's disease, hip disease, or tumor albus is in most cases to render a sensitive joint much less sensitive and especially to control spasmodic pain, so common in the form of “night cries.” There is no need of salicylate of soda apparently in the routine treatment of cases of hip disease where pain and sensitiveness are absent and only muscular fixation is the chief symptom, but if night cries are present or the joint is sensitive to manipulation the administration of salicylic acid becomes an invaluable adjuvant to proper mechanical treatment.

The relation of individual cases is always tiresome, but it seems the only available way to present this subject, as the statistical method is not applicable in speaking of any such subject as the special action of a drug. The following cases, presented in the merest outline, are random cases from hospital and private practice, chosen merely as being representative of the conditions in which the drug is likely to be of benefit. They are not exceptional cases in any way.

CASES.

I. Katie M., four years old. Typical hip disease of the left side. The child had been under treatment by the long traction splint for some eight months. In December, 1888, owing to some unknown cause the leg became very sensitive and was flexed and abducted. The condition became so marked that she was put to bed with a weight of three pounds pulling upon the leg, but no relief came and night cries came on. The weight was increased to five and then eight pounds, without controlling the cries. Through the day the child was comfortable, but early in the evening she cried out every night very many times and mechanical means were tried in vain to control the cries. Finally the mother came to my office and told me that the previous night the child had cried out oftener than ever before and very loudly, so much so that she had disturbed the neighbors. The child was given ten grains of salicylate of soda three times a day. The medicine was begun one Monday afternoon and Monday night she cried out as much as ever, but Tuesday night she screamed very little and Wednesday not at all, and the night cries have never returned, although the salicylate was only continued for three weeks. The child's present condition is better than it has been since she has been under my care.

II. Fred D., twelve years old. First came under treatment March, 1888, in the early stage of hip disease. It was a mild and slow case, not marked by pain or sensitiveness and he did very well under the use of a long traction splint. Last April he fell down stairs at school and went home in much pain. His condition became worse. His mother removed his splint, and some days later when I saw him at home his joint was in that acutely sensitive condition sometimes seen, in which the muscles continually jerk and pull the head of the bone against the acetabulum. Every jar was exquisitely painful, and he screamed with pain continually. I applied a bed extension to produce traction with a seven-pound weight, and he became much easier. But his cries at night continued and a week later the joint was still so sensitive as to make it impossible to move him, and his night cries were distressing. He was given ten grains of salicylate of soda every three hours and in twenty-four hours the night cries had ceased and the condition of the joint improved so that he was soon able to be up

and about within a very few days. His present condition is most satisfactory.

Three cases were under close observation in the wards of the Children's Hospital, and the action of the salicylate of soda could be accurately observed.

III. Joseph R., seven years old, service of Dr. E. H. Bradford. Very acute hip disease. This boy had been much neglected at home and was admitted to the hospital with an abscess of the thigh and an exquisitely sensitive joint. He cried out continually through the night and every movement was painful. Every evening since his admission, the record states, he had cried out very sharply, not only early in the evening but at intervals through the night. On January 21st, at my request, he was given eight grains of salicylate of soda and slept soundly till 10.30, when he was given a second dose and slept till 2.30 A.M., after which he cried out six times. January 22nd no salicylate was given early in the evening and he cried out continually until 1 A.M., when a ten-grain dose of salicylate was given and he slept quietly for the rest of the night. A similar experience was noted on several subsequent nights, and he was finally put upon ten-grain doses of salicylate of soda four times daily and the night cries practically disappeared and are only heard very rarely. The condition of the joint has steadily improved.

IV. Fred G., eight years old. Acute hip disease. A patient in the service of Dr. A. T. Cabot. For one or two weeks after admission this patient cried out regularly five or six times each night. Salicylate of soda was given in ten-grain doses every four hours. Since the first night that the salicylate was given, now some four weeks, the boy has not cried even once. The medicine is still continued.

V. Sarah W., eight years old. Acute hip disease and tumor albus. Service of Dr. Cabot. This child, during a stay of several weeks in the hospital, had suffered very much from night cries, for which every mechanical resource had been tried in vain, and finally the pain in the hip became so continuous and severe that she was given two teaspoonfuls of paregoric each night and in about two hours the pain was ordinarily relieved. On the night of January 21st no opium was given, but in place of it eight grains of salicylate of soda, and in forty minutes the pain was much relieved and in one hour it had disappeared. For several nights when she cried the salicylate was given, always with relief more complete than from the paregoric. January 26th the salicylate was withheld experimentally, and through the evening she cried very much with pain.

Finally she was given ten grains of salicylate four times daily, and all acute symptoms, and especially the evening pains, have disappeared, although the hip is still very sensitive.

It seems proper to add that the mechanical conditions were constant while the experiments were being tried with the salicylate of soda. In each of these cases every mechanical means had been tried to control the pain before the salicylate was administered.

VI. James H., six years old. This boy with hip disease was a case attending the out-patient department of the Children's Hospital, who had been much neglected by his parents and for the first fifteen months of his disease they would not bring him for treatment. When he finally came his joint was in such an acutely sensitive condition that out-patient treatment was impossible and he was admitted to the Good Samaritan Hospital. Rest in bed and continuous traction failed to give speedy relief, but he grew slowly better and was allowed to go home. A relapse at once followed and he came back only to be confined in bed again. This time his joint did not improve very much and he cried out at night more than ever. Finally salicylate of soda was given in the usual doses, but no relief of any consequence followed. After several months I trephined through the trochanter into the head of the bone in the method described by Mr. Stokes, and evacuated a cheesy focus. The night cries stopped for three weeks but began again in a modified form. Salicylate of soda was again tried, with the effect upon the night cries which is noted below:—

Jan. 20	21	22	23	24	25	26	27
Night cries	1	2	2	2	1	0	0
Jan. 28	29	30	31.	Feb. 1	2	3	
Night cries	0	0	0	0	2	0	

Salicylate of soda begun Jan. 23; salicylate omitted Jan 31.

This record is copied from that kept by a night nurse who was constantly in the room with the child.

VII. Dora B., eleven. Dorsal Pott's disease for one year. Some months ago a Taylor back brace was applied at the hospital and much relief was afforded, and the child, having every care at home, grew better and was very comfortable. Late in the fall of 1888 the child grew pale and began to have pain in walking, especially at any sudden jar, which hurt her back very much. She had vomiting and occasional supraorbital neuralgia, and violent attacks of pain in her side and chest. The brace fitted perfectly and no cause for her poor condition was assignable. Her condition became worse and she had severe spasmodic pain in the back. Salicylate of soda was given in ten-grain doses three and four times daily, and in a week the mother brought the child to the hospital free from pain and in much better condition. The salicylate was continued for one week more and then omitted. Within forty-eight hours of its omission the pain in the back was nearly as bad as ever and for several days the child suffered much. At the next visit to the hospital the salicylate was again prescribed, with the same beneficial result as before. After several weeks the child is now in a perfectly satisfactory condition but is still taking fifteen grains of the drug each day.

VIII. Frank K., nine years old. Pott's disease for several years. The boy had worn an inefficient brace, which afforded him but little support. When brought to the hospital an abscess was coming on, his temperature was high, and his general condition very wretched. He was very sensitive and could not sleep at night on account of pain,

and he was very much distressed by every movement. On January 28, 1889, his first appearance, he was given salicylate of soda in ten-grain doses three times a day. On February 4, 1889, his mother returned with him, saying that for many months he had not been so comfortable or able to be moved so easily.

IX. James K., eight months old, appeared at the Children's Hospital out-patient department with an acute inflammatory process in the right hip-joint resembling acute coxitis. No cause could be assigned. The joint was immobilized in its flexed position by a posterior wire-splint, but no relief followed and for a month he continued in this state. Finally he was given salicylate of soda in three-grain doses three times daily and within two days his pain was very much less, he nursed better, and his general condition improved very much. He is now in the condition of chronic joint disease without the acute symptoms of pain, etc.

X. Mary K., four years old. Children's Hospital, out-patient department. Low dorsal Pott's disease with beginning psoas abscess. This child had suffered from Pott's disease for two years, but having been much neglected by the mother, presented herself, when she finally came to the hospital, in very bad condition, and although a Taylor back brace was applied, the disease was so acute that she suffered much pain and especially when psoas abscess began to form. Her cries were very severe, especially at night. Salicylate of soda was given in five-grain doses three times daily, and in twenty-four hours, by the mother's report, the pain was very much relieved and continued insignificant, although the abscess steadily increased until the abscess was opened.

To quote further cases would be merely to repeat what has already been told. The use of salicylate of soda in these painful joint affections is of course purely empirical, and what is known of the drug and its physiological action would give no hint to this use of it. Yet it must be evident how very marked its action is in controlling spasmodic pain, and modifying the sensitiveness of acutely inflamed joints.

Most of the patients in the list of cases reported above were suffering from a joint affection clearly tubercular in type, nor was the drug given under the impression that a mistake in diagnosis had been made and that the affection was really rheumatic.

The facts are these: in chronic tuberculous joint disease there is no more common or distressing complication than that acutely sensitive condition which comes on sometimes of itself, and sometimes as a result of inefficient treatment. Mechanical treatment will sometimes control it and at other times is powerless to relieve it in any way. At such times the experimentation above related has shown that salicylic acid is a powerful agent in relieving the spasmodic pain if given in large enough doses, but this analgesic action is not permanent but transitory, and passes off. It may be that salicylic acid has some power of controlling spasmodic pain in general, or it may be only that it possesses some peculiar influence over joint pain.

In the cases coming under the writer's observation no mishaps have occurred in the use of the drug, although in cases where it was continued for a long time the kidneys were watched to see that no nephritis was set up, and in hospital out-patients the drug has not been ordered in cases where the parents were not careful people, and able to bring the child each week to the clinic. The form prescribed has been the salicylate of soda made up in the ordinary five-grain tablets, and these have been taken readily, without complaint. The experience in the use of the drug in this connection has led of late to its wider and earlier use in the hospital clinic, *always, however, as an adjunct to proper mechanical treatment.*

The conclusions which the writer would offer, as exemplified in the cases already related, are:—

That salicylic acid in large doses is useful as an aid to the mechanical treatment of chronic tuberculous joint disease, not in routine conditions, but—

(1) When night cries are present.

(2) When the diseased joint is very painful and sensitive to jar.

(3) When vomiting and general discomfort are associated with an increase in the local disease.

That relief from pain, and diminished sensitiveness follow at once, as quickly as in acute articular rheumatism, and that the drug should be given in as large doses as for that affection until the pain is relieved or the physiological effect is produced.

REPORT ON PUBLIC HYGIENE.

BY N. W. ABBOTT, M.D.

PREVENTION OF COMMUNICABLE DISEASES.

Vaccination.—Data have recently been compiled by the Italian government relative to the extent to which vaccination is now practised by different countries.¹ They are as follows:—

Countries.	Period.	Living births.	Number vaccinated.	Per cent. vaccinated.
Italy.	1880-84	5,214,098	3,820,689	73
Germany.	1880-82	5,080,672	3,625,839	71
Prussia.	1880-82	3,077,742	2,278,004	74
Bavaria.	1880-82	608,925	378,945	62
Saxony.	1880-82	374,979	251,647	67
Württemberg.	1880-82	230,776	154,412	67
Baden.	1880-82	165,784	94,629	57
Other States.	1880-82	622,466	468,322	75
Austria.	1880-83	3,393,810	2,641,080	78
Hungary.	1880-83	1,794,900	1,547,406	86
France.	1883-84	1,853,250	1,194,796	64
England and Wales.	1875-77	2,668,074	2,291,352	86
	1882-83	1,779,862	1,525,605	86
Scotland.	1873-84	1,504,319	1,320,188	88
Ireland.	1882-85	475,637	422,311	89
Holland.	1880-83	577,380	475,533	82
Norway.	1880-82	176,640	153,909	87
Sweden.	1881-83	401,396	320,253	80
European Russia.	1883	3,880,857	2,185,274	56

Körösi sums up the contested points in regard to vaccination as follows: ²—

1. Whether, in an equal number of the vaccinated and unvaccinated, fewer of the former are attacked by small-pox than of the latter (a question of morbidity).

2. Whether, in an equal number of vaccinated and unvaccinated, fewer of the former die of small-pox (a question of mortality). To the question as to the ratio of the deaths from small-pox to the number of those taken sick with the disease, Dr. Körösi applies the term lethality.

3. Whether or not vaccination is of itself innocuous, and whether or not other diseases may not be introduced by vaccination.

Dr. Körösi gives the data relative to 1,113 persons over one year of age who were ill with small-pox in Buda-Pest. Of these 631 were vaccinated, of which number 42 died, or 6.6%; 468 were not vaccinated, of which number 231 died; or 49.7%; there were 17 doubtful cases, of whom 3 died; so that, with reference to small-pox, the lethality of the unvaccinated was 800% greater than that of the vaccinated. He admits that not quite all of this difference can be attributed to neglect of vaccination, since from all other diseases upon which neglect of vaccination has no effect there died 160 unvaccinated to 100 vaccinated. Taking this into account, we may still predict that under like conditions the unvaccinated will have nearly a sixfold greater liability to death when stricken with small-pox than the vaccinated.

¹ Risultate dell' Inchiesta sulle Condizioni igieniche e Sanitarie nei Comuni del Regno.

² Neue Beobachtungen über den Einfluss Schutzpockenimpfung auf Morbidität und Mortalität.

Period of collection of bovine lymph.—Negri occasionally made use of lymph taken at the expiration of three days (3x24 hours). Upon the continent it is common to employ lymph collected either at the close of 5x24 or 6x24 hours.³ In the United States it is quite common to use that which is collected at the end of 7x24 hours after insertion, or if the collection requires several hours, to complete the operation at that time, after the method of Lanoix. Undoubtedly temperature modifies the development of the vesicle, and in warm countries the period is shorter than it is in cold countries.

In Holland the practice is as follows:—

At Rotterdam, a portion of the calves 5x24 hours, another portion 6x24 hours. At the Hague 5x24. At Utrecht a calf is vaccinated on one side with lymph taken 6x24 hours after injection and on the following day on the other side with lymph taken 5x24 hours after injection. In Amsterdam a portion 4x24 hours, and another portion 5x24 hours. In Haarlem 5x24 hours, and in Brussels 5x24 hours and 6x24 hours. In England the usual practice is to take lymph 5x24 hours after insertion.

The number of insertions vary from 50 to 200, according to the demand. The age of animals used varies from three to nine months.

The following are a portion of the recent regulations of the German government relative to animal vaccination. Decree of the Bundesrath of April 28, 1887:—

Selection and examination of animals for vaccination.—§ 1. In procuring animal lymph, only those animals are to be chosen whose state of health can be determined by slaughter, and by an examination of the internal organs after taking the vaccine lymph.

§ 3. Before vaccination the condition of the animal must be determined by a veterinary surgeon. Only those animals which are perfectly healthy are to be employed. The selected animals are to be numbered and registered immediately after the examination.

§ 4. The temperature of the body should be noted at the time of vaccination and at the time of collection of lymph. If the temperature exceeds 41° C., or if there are other signs of illness, except slight digestive disturbance, the animal must be excluded.

§ 5. After taking the vaccine lymph, the animals must be killed and examined by a veterinary surgeon. The examination should especially be directed to the condition of the navel and of its vessels, the peritoneum and pleura, the lungs, liver, and spleen.

§ 6. The veterinarian must give a certificate of every vaccination.

§ 7. The lymph must only be issued to the vaccinating physicians when the autopsy shows that the animal was healthy.

§ 12. Animals which have come from a distance must not be vaccinated until the day after their arrival.

§ 13. The room for vaccination and lymph col-

³ Villard. Manuel pratique de vaccination animale, Paris, 1886, p. 40.