

SMITH (S. Mc G.)

The Class of Cases in which we may expect Good
Results from Excision of the Membrana
Tympani and Ossicles.

BY

S. MACCUEN SMITH, M.D.,

Lecturer on Otology and Chief of Aural Clinic in Jefferson Medical College of Philadelphia; Surgeon in
Charge of the Ear, Throat, and Nose Department of the Germantown
Hospital, Philadelphia, etc.

[REPRINTED FROM THE THERAPEUTIC GAZETTE FOR JULY 15, 1893.]

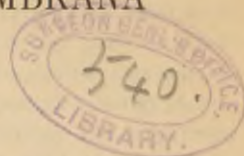
DETROIT, MICH.:

GEORGE S. DAVIS, PUBLISHER.

1893.



THE CLASS OF CASES IN WHICH WE MAY EXPECT GOOD RESULTS FROM EXCISION OF THE MEMBRANA TYMPANI AND OSSICLES.



THE history of excision of the membrana tympani and ossicles has been brought to the notice of the profession so frequently that a repetition of these familiar facts would prove tiresome and uninteresting. We should, however, mention the fact that Kessel in 1875 and Schwartze in 1885 performed this operation for the relief of *deafness only*; while great credit is due to Sexton, who, in 1886, by his courage and skill, brought before the medical world the results of his numerous operations for the cure of *chronic aural discharges*, and later for the relief of deafness. It was Sexton, therefore, who first proposed this operation, and performed excision of the membrana tympani and ossicles for the cure of discharge from the ear.

Burnett and others, however, soon followed, and by publishing their results did much to establish this formerly-condemned operation and bring it to the almost universal recognition of that part of the profession especially interested in aural surgery.

We are all familiar with the determined opposition this reasonable operation called forth from some quarters. It did, indeed, seem peculiar that advocates of rational medicine should have offered such strong and damaging protests against a surgical procedure which they could not but acknowledge was based on *sound surgical principles*; and especially did this opposition appear unreasonable when we remember that these same opponents were acquainted with many unfortunate patients suffering from a chronic discharging ear with its many dangers, which had not only resisted *their* every effort, but had, moreover, baffled the skill of other specialists.

The great danger to life arising from a suppurative disease of the middle ear is now admitted by all, and surely any procedure proposed for its relief is worthy of due and proper consideration, so long as the treatment thus suggested is not likely to produce bad results, and has for its support the same sound anatomical, pathological, and physio-

logical backing that has characterized all the noted advances of modern surgery.

Those who have not taken kindly to this rational treatment have declared the operation to be dangerous, and therefore involving too many risks to admit of its becoming popular; to all of which we would ask whether this or any other proper surgical procedure could be more of a daily menace to life than a chronic discharge from a cavity the walls of which are composed of plates of bone that are extremely thin and surrounded by such vital parts as the brain and important blood-vessels? It is certain that a continuation of the discharge favors necrosis of these delicate plates of bone, and thereby induces, through continuity of structure or by direct communication, abscess of the mastoid, septic inflammation of the brain-substance and its coverings, or *cerebral abscess*, from which alone there are annually dying in the United States probably four thousand of her inhabitants.

At present it is difficult to say precisely just what class of cases are most likely to yield good results from this mode of treatment. Some few cases, regardless of the duration of tinnitus and vertigo or the degree of deafness, will give very satisfactory results. As a general rule, however, it is not well to expect too much improvement of hearing from a chronic, non-suppurative otitis media; and yet, in this class of cases, where tinnitus, pain, and vertigo are urgent symptoms, and have resisted other methods of treatment, we should not hesitate to suggest the removal of the membrana tympani and one or more of the ossicles for their relief. It has not been our custom in the non-suppurative cases to excise the entire membrana tympani unless it is greatly thickened, opaque, and firmly adherent to the tympanic walls. In this class of cases it is interesting to note the large number of patients in which the tympanic membrane presents quite a healthy appearance. It is, however, in just such cases that we remove only sufficient membrane to enable us to excise the malleus, the incus, or both.

In this modified operation it is very unusual to have any reaction, and we likewise avoid the pain and suppuration that has at times been reported. By this partial myringectomy, regeneration of the membrane is so slow that at present we can recall at least seven cases in which the original opening has remained for more than two years. Moreover, in our experience of over two hundred patients operated on, we are convinced that it is seldom necessary to remove the membrana tympani after regeneration has occurred, unless, of course, the operation had been performed in one of the suppurative cases, and where regeneration of the membrane had confined a dangerous necrosis of the tympanic cavity, or concealed a threatened mastoid involvement.

In order to obtain good results in the suppurative cases, we believe it to be positively essential to remove every fragment of the membrane, as this is the *only* way in which we can hope to obtain free drainage and procure an opening through which to properly treat the diseased cavity.

If the attic is involved it will be found necessary to excise both the malleus and incus, for these bones are very susceptible to carious degeneration, and where either is left behind, the suppuration is almost sure to continue; and even if the discharge should cease, it is likely to reappear at any time in the future.

In regard to the operation for excision of the stapes, which has met with such good results in the hands of Dr. Jack, of Boston, I can say but little, as my experience with this operation is limited to two cases; both of these, however, were somewhat successful in the relief of symptoms that have otherwise resisted treatment; but as each of these cases suffered from prolonged staggering vertigo as sequela of the operation (possibly due to my lack of skill), and as out-patients have generally recovered without this procedure, we have found no indication for advising or performing this more formidable operation.

In order to show the benefit that is sometimes obtained from apparently the most hopeless condition, we will review the detailed history of several unique cases, characterized by marked deafness, severe pain, and vertigo, all of which were relieved by operation.

CASE I.—J. K., thirty-nine years, began to lose his hearing, accompanied by an itching of the external auditory canal, ten years ago. This loss of hearing was in both ears, and continued to grow worse until eighteen months ago, when he was suddenly taken with severe pain in each ear, radiating over the entire head. This pain

continued without interruption for nine months; then, without apparent cause, the pain increased in such violence as to necessitate his going to bed and summoning a physician. Before relief could be obtained he became totally deaf in the left ear. At the end of two weeks the pain was so much better as to enable him to leave his bed. Some pain, however, has continued, and now seems to be confined to the right ear. On January 10, 1893, he consulted the writer (bringing a note from the family physician, to whom I am indebted for his previous history).

It is well to state that this patient has never had any discharge from the ear, nor does he remember having had at any time an injury to his head. Except for the inflammation extending along the manubrium, nothing of any importance could be seen to account for his suffering. The mastoid region presented a healthy appearance; the drum, however, was much retracted and firmly adherent to the promontory. His hearing-power was *nil* through aerial conduction of sound. Bone conduction was about three-fourths normal.

With the hope of relieving the pain alone, we suggested the removal of the drum and ossicles. On January 16, 1893, under ether, in the hands of Dr. Pontius, we removed the drum by the circular incision and extracted the malleus and incus in a piecemeal way, their vitality having been so completely destroyed by the process of necrosis that they crushed to powder under the slight pressure of a delicate pair of forceps. These bones had undergone the several changes which are more forcibly than elegantly expressed by the term "dry rot." I believe this was the first and only case in the writer's experience where complete excision of the drum was accomplished without any hemorrhage. After operation the tympanum and canal were lightly packed with iodoform cotton and the patient kept quietly in bed. For three days the pain was in no way relieved, although the hearing was materially improved. From the third day, however, the pain and tinnitus grew less, while the hearing-power continued to increase.

On January 24, or eight days following the operation, the pain and tinnitus were so slight as to be barely noticeable. Could hear loud conversation at three feet; tuning-fork and watch were negative in result.

March 12, or about two months after the operation, reports that he has been free from pain and almost free from tinnitus for two weeks. Hearing-power slightly improved.

May 16, has not had pain since six weeks

following the operation, and the tinnitus is now so slight as not to annoy him. Thinks it is growing less each day. Can hear ordinary conversation at six and a half feet, fork and watch each at four and a half inches.

It is difficult to say why this man should have suffered so severely, for surely the condition as above narrated does not seem to be a sufficient explanation. As regards tinnitus and loss of hearing, we consider this to be fully explained in expressing the belief that a thick drum bound down by adhesions, with ankylosis or other disease of the ossicles, acts as a foreign body, and as such produces tinnitus and deafness, the degree of which is in direct ratio to the extent of the disease present, and consequent interference with their normal function. We would, therefore, consider the removal of such disturbing foreign elements as not only sufficient reason for the partial or complete restoration of hearing, but it can also be hoped for and reasonably expected that we may secure relief from distressing tinnitus and oftentimes dangerous vertigo.

CASE II.—A. M., aged sixteen, applied for treatment August 10, 1890. When seven years old had scarlet fever. This was followed by discharge from both ears, which was continuous until the above date. Meanwhile, was progressively and rapidly losing her hearing. Suffered continuous pain, sometimes very severe; was totally deaf in left ear. After making many and various unsuccessful efforts to arrest the discharge and relieve pain, we suggested the removal of the fragment of drum and malleus. This we performed on December 9, 1890, after which the ear was packed with iodoform cotton, and replaced by fresh cotton every one or two days.

December 20.—No discharge since operation; hears fork at five inches, watch at three inches, ordinary conversation at three feet.

January 26, 1891.—Tympanum entirely dry; hears fork at five inches, watch at six inches, ordinary conversation at five feet.

April, 1891.—No discharge since operation; hears watch at six inches, fork at seven inches, ordinary conversation at twelve feet.

December, 1891.—Slight improvement over the above.

July, 1892.—Hears watch at $\frac{1}{2}$ inch, fork at twelve inches, ordinary conversation at fourteen feet.

May 24, 1893, or two and a half years after operation, hears watch at $\frac{1}{2}$ inch, fork at seventeen inches, ordinary conversation at twenty-seven feet; no discharge since date of operation; health much improved; performs the duties of

life quite as well as if she had never been deaf or suffered from pain in that ear.

CASE III.—H. D., sixty-two years old, applied March 10, 1893. Six years ago resided in England, at which time was taken with a severe pain in the right ear, which she thinks came from cold. Never had any ear-trouble before, and has always enjoyed good health. Was treated by physicians in England for three years, but received no benefit. Has been in this country for three years, and undergone treatment at the hands of many physicians and as a private patient at several hospitals, without beneficial results.

On March 10 last, or three months ago, she consulted the writer at the Jefferson Hospital, suffering extreme pain and greatly annoying tinnitus in the head. Never had a discharge from the ear, but has suffered from severe headache since early adult life.

The drum and external auditory canal, on examination, revealed nothing abnormal, except some inflammation covering the manubrium. The Eustachian tube was somewhat swollen, but inflation of the tympanum by Politzer's method was easily accomplished. This interference, however, gave her some increase of pain. By aerial conduction of sound she could hear only very loud conversation; watch and tuning-fork could not be heard; bone conduction, however, was quite normal. Aside from operative interference it was difficult to suggest or carry out a line of treatment with any reasonable prospect of securing relief, and inasmuch as she had undergone much treatment of the usual routine kind without in any way being benefited, we felt justified in suggesting excision of the drum and malleus, which was performed on March 30, 1893.

For one week following operation she continued to suffer some pain, but it was markedly less severe. On the tenth day a slight discharge of pus was noticed, at which time the pain entirely ceased. The discharge became quite copious three days later. Sixteen days after operation the discharge was quite scanty and the pain returned. A free discharge, however, was re-established, and the pain again ceased, not to return again.

April 30, 1893.—Pain relieved; discharge entirely gone; heard the fork at one inch, watch at $\frac{3}{4}$ inch; ordinary conversation at six feet.

May 10, 1893.—Tympanum entirely dry; no pain; hears watch at $\frac{3}{4}$ inch, fork at nine inches; ordinary conversation can be heard at the normal distance. Patient expresses herself as feeling entirely well; hears everything at church or opera.

CASE IV.—E. M., thirty-nine years old; first seen January 15, 1893. When four years old had a severe illness, which was followed by a discharge in both ears. This continued until eighteen years old, when the discharge ceased in each ear. Two years later she suffered from severe pain in the left ear for one week, when the drum ruptured, followed by the free escape of pus and relief from pain. The running continued for some weeks, then ceased, since which time she has been free from discharge or inconvenience of any kind until two years ago, when her hearing began to fail, accompanied by some "neuralgic pain" in head and distressing tinnitus. Is now totally deaf to aerial conduction of sound, the osseous conduction being quite normal.

After making unsuccessful efforts for her relief, I advised the removal of the ossicles and drum of the left ear, which we did on March 20, 1893. The operation was followed by considerable discharge for several days, but the hearing began to improve almost immediately and the tinnitus to grow less. The pain has been entirely relieved.

May 18, 1893.—Pain and tinnitus entirely relieved; hears tuning-fork at ten inches, watch at $\frac{4}{80}$, ordinary conversation at two feet; general health, which had been very poor before operation, is greatly improved; discharge has entirely ceased; tinnitus and pain effectually relieved.

CASE V.—F. B., aged twenty-five, consulted me September 21, 1889. In 1887 I had treated the sister of this patient for impairment of hearing, due to impacted wax; and, as she was impressed with the idea that something unusually skilful had been done for her, she informed me of a sister living in Breslau, Germany, who had been deaf from early childhood, and suggested that possibly we might be able to give her relief. She was advised to send for her sister, who presented herself about two years later, giving the following history: Has suffered pain ever since she was old enough to remember. At times it was so severe as to necessitate her going to bed, and could only be relieved by the hypodermic injection of morphine. This pain was not confined to the ears, but seemed to be general over the entire head. Does not remember ever having had discharge from the ears. Noises in the head, of almost every character, were very severe and caused her great annoyance. She expressed herself as being entirely satisfied if she could be relieved of the pain and tinnitus, as she had given up all hope of ever hearing again. She claims to have been treated without success in

Berlin, Vienna, Dublin, and London, and to have had a "nerve cut" three different times with the hope of securing relief from the severe pain.

On examination we found the external auditory canal in each ear somewhat obstructed by an accumulation of inflammatory products, and very painful to the touch. The drum of each ear was congested, markedly thickened, and so much retracted as to be immovably adherent to the promontory. We found the Eustachian tube obstructed, which, however, promptly yielded to treatment, but without improving the hearing to any appreciable extent. On careful examination of the hearing-power, she proved to be totally deaf to all sounds, regardless of their pitch or character. The osseous conduction of sound, however, was perfect. Of course, the history and unfavorable results of the examination, except for the good bone conduction, compelled us to regard any hopes of improvement in hearing as improbable. However, feeling it our duty to at least make an effort to relieve the pain and tinnitus, we concluded to remove the drum and one or more ossicles, as might be necessary. Accordingly, on October 3, 1889, we excised the drum and ossicles of the left ear. The patient positively refused to take an anæsthetic of any kind, because a relative had died under its use. This was the first case of this character that I have ever done under cocaine. The pain was quite severe during the operation, but being a woman of determination and pluck, she stood her suffering very well. The malleus and incus both showed evidences of necrosis, particularly the malleus, which was only about half its natural size, and through necrosis resembled in appearance and structure a piece of dried dead wood, that one could with but little force crush between the fingers. The meatus was packed with iodoform cotton and the patient kept quietly in bed for three days. On removing the cotton she said she could hear our conversation and the noises in the street. The tympanum was dry; pain almost relieved; tinnitus much less, and patient feeling happy.

October 12, 1889.—There has not been a drop of pus; tympanum entirely dry; pain gone, and only a little pulsating tinnitus. Hears the fork at nine inches and watch at $\frac{8}{80}$, ordinary conversation at fourteen feet.

November, 1889.—All the above good results continue. The patient feels so well satisfied with the results of the operation on left ear that she now makes a request to have the other ear operated on, as the pain still continues in it. This, however, we refused to do at present.

February 6, 1890.—Again the patient returned to have the right ear operated on. She was advised to wait a few months longer, so as to ascertain definitely whether the results of the operation on the left ear are positively permanent.

May 9, 1891, or about eighteen months from the date of first operation, the right ear was operated on and a similar condition of the drum and ossicles found. The results of operation were quite as satisfactory.

January, 1892.—Patient has been entirely relieved of pain since second operation; hears perfectly well; tinnitus entirely gone; general health excellent, and likes America so well that she has concluded to make it her future home.

May 9, 1893.—Has been entirely relieved of pain from date of second operation; tinnitus has not returned; hearing is entirely normal, and all of these favorable results from the operations have been permanent for over two years.

CASE VI.—B. S., aged eighty-one. In April, 1888, this patient consulted me for deafness, tinnitus, and vertigo. He gave the following history: Forty years ago, while exposed to the sun's rays, was suddenly attacked with slight pain in each ear. He became dizzy, fell to the ground, striking his head with much force, and was carried home in a semi-conscious state. For three years prior to this attack had occasionally complained of a "fulness and queer feeling in the head." For seventeen weeks he suffered so much from vertigo as to prevent him from leaving his bed. From the time of this accident, which was in 1848, to the year 1889, covering a period of forty-one years, he has suffered more or less from vertigo, increasing tinnitus, and deafness. For the past ten years the vertigo would appear without warning, and with such severity as to necessitate his having an attendant with him constantly. During this period of ten years the tinnitus has correspondingly increased, and the hearing-power in like manner become progressively defective. He was entirely deaf to aerial conduction of both watch and fork; loud conversation could be heard at one foot. In his efforts for relief he consulted many physicians, making three trips to Europe for this purpose. In September, 1889, we suggested the removal of the drum and ossicles. This proposition was accepted with great reluctance on account of his age, and more especially because he had been advised not to submit to any surgical operation. We operated on the left ear September 12, 1889, and found the drum in this case thickened and adherent to the tympanum; likewise

the ossicles had undergone the above peculiar changes due to necrosis. Six days after operation his hearing and tinnitus had somewhat improved; no pain nor disturbance of any kind followed the operation.

September 27, or fifteen days after operation, he states that nearly all pain and tinnitus has been relieved; has had but little vertigo.

October 18.—Pain entirely relieved; tinnitus much improved; slight vertigo remaining.

November 1, 1889.—Tinnitus and pain entirely relieved; hears ordinary conversation at seven feet; has had but two attacks of vertigo in three weeks.

April 6, 1890.—Operated on right ear with similar good result.

July 6, 1890.—Has just returned from Atlantic City, and reports himself as entirely free from pain, vertigo, and tinnitus; hears ordinary conversation at sixteen feet, watch at one inch, and fork at four inches.

September 12, 1892, or about three years since first operation and two and a half years since the second; has continued in good health, except a slight attack of dizziness, which, however, lasted but a few days.

April 14, 1893.—Has just returned from a trip to the Pacific coast, where he spent the winter and enjoyed good health, being entirely free from tinnitus and vertigo. He hears very much better than men usually do at his time of life.

In the foregoing list of one hundred and fifty-four operations it will be found that from Cases 15 to 84, inclusive, we record sixty-nine patients presenting the non-suppurative variety of middle-ear disease. Many of these patients suffered from distressing tinnitus, severe pain, staggering, vertigo, and marked impairment of hearing, while others complained of one or more of these same symptoms in a much less degree. Their ages range from twenty-one to eighty-one years. The time in which the patients suffered from one or more of these symptoms varies from two to forty years, while the time elapsing since the date of operation is from three months to four years. The improvement in tinnitus and vertigo has been in many cases most striking and satisfactory, notwithstanding the little hope that could be offered for their relief, in some of the cases, before operation. The probable improvement of hearing in this class of cases is, of course, not marked by so many favorable possibilities as in the suppurative variety, and yet a perusal of the carefully-recorded results will, we think, be convincing that the operation in selected cases

No.	Age.	Sex.	Discharge.				Hearing-power.				Results of operation.				Hearing-power.				Cause of dis- ease.	Operation.			
			Continuous.	Recurrent.	Duration.	Tinnitus.	Pain.	Vertigo.	Ear.	Voice.	Tuning-fork.	Watch.	Bone con- struction.	Discharge.	Pain.	Tinnitus.	Vertigo.	Voice.			Tuning-fork.	Watch.	Time since operation.
1	16	M.	Yes.	No.	12 yrs.	No.	L.	Loud 2 ft.	No.	Normal.	No.	No.	No.	No.	No.	No.	O. C. 19 ft.	11 in.	$\frac{11}{16}$	3 yrs.	Scarlet fever.	Mal. and inc.	
2	24	F.	Yes.	Yes.	9 "	Yes.	"	No.	"	"	"	"	"	"	"	"	"	4 "	3 "	$\frac{16}{16}$	10 mos.	Not known.	"
3	36	"	Yes.	No.	19 mos.	Severe	"	No.	"	"	"	"	"	"	"	"	21 "	10 "	$\frac{16}{16}$	4 yrs.	La grippe.	"	
4	9	"	Yes.	Yes.	7 yrs.	No.	R.	O. C. 1 "	"	$\frac{3}{4}$ "	"	"	"	"	"	"	10 "	5 "	$\frac{16}{16}$	7 mos.	Measles.	"	
5	81	M.	No.	No.	No.	Severe	Both	No.	"	$\frac{1}{2}$ "	"	"	"	"	"	"	11 "	7 "	$\frac{16}{16}$	3 1/2 yrs.	Not known.	"	
6	7	F.	Yes.	"	2 yrs.	No.	"	O. C. 2 "	"	$\frac{1}{2}$ "	"	"	"	"	"	"	6 "	9 "	$\frac{16}{16}$	1 yr.	Scarlet fever.	"	
7	18	"	Yes.	Yes.	13 "	Yes.	"	3 in.	"	$\frac{3}{4}$ "	"	"	"	"	"	"	15 "	12 "	$\frac{16}{16}$	16 mos.	"	"	
8	14	"	Yes.	No.	2 1/2 "	No.	R.	1 ft.	"	"	"	"	"	"	"	"	10 "	5 "	$\frac{16}{16}$	2 yrs.	La grippe.	Incus.	
9	7	M.	Yes.	Yes.	4 1/2 "	Yes.	"	1 "	"	"	"	"	"	"	"	"	16 "	8 "	$\frac{16}{16}$	3 "	Scarlet fever.	"	
10	52	F.	No.	No.	.....	Severe	Both	L. C. 1 "	No.	Slight.	"	"	"	"	"	"	2 "	No.	No.	2 1/2 "	Not known.	Mal. and inc.
11	12	"	Yes.	"	2 yrs.	No.	R.	O. C. 2 "	1 in.	Normal.	"	"	"	"	"	"	12 "	4 in.	$\frac{16}{16}$	4 "	La grippe.	"	
12	12	M.	"	"	3 "	"	"	2 1/2 "	1/2 "	"	"	"	"	"	"	"	18 "	9 "	$\frac{16}{16}$	3 1/2 "	"	"	
13	54	"	"	Yes.	3 "	Yes.	"	1 "	No.	"	"	"	"	"	"	"	26 "	16 "	$\frac{16}{16}$	4 "	"	"	
14	45	"	No.	Yes.	7 "	Severe	L.	3 "	"	"	"	"	"	"	"	"	5 "	9 "	$\frac{16}{16}$	4 "	"	"	
15	80	"	.....	.....	.....	Severe	Both	Very L. 1 ft.	"	$\frac{1}{2}$ "	"	"	"	"	"	"	4 "	2 "	$\frac{16}{16}$	3 1/2 "	Not known.	Inc. and mal., drum intact.
16	53	F.	.....	.....	.....	10 yrs. severe.	"	O. C. 3 ft.	"	"	"	"	"	"	"	"	2 "	1 "	$\frac{16}{16}$	"	"	"
17	62	"	.....	.....	.....	2 yrs.	"	1/2 "	"	$\frac{3}{4}$ "	"	"	"	"	"	"	2 "	4 "	$\frac{16}{16}$	2 3/4 "	"	"
18	49	M.	.....	.....	.....	Severe	"	7 in.	"	"	"	"	"	"	"	"	12 "	7 "	$\frac{16}{16}$	1 "	"	"
19	57	F.	.....	.....	.....	Severe	"	2 ft.	"	"	"	"	"	"	"	"	16 "	3 "	$\frac{16}{16}$	3 1/2 "	"	"
20	71	M.	.....	.....	.....	Severe	"	4 "	"	$\frac{3}{4}$ "	"	"	"	"	"	"	9 "	11 "	$\frac{16}{16}$	1 1/2 "	La grippe.	"
21	39	"	.....	.....	.....	Yes.	"	6 "	2 in.	"	"	"	"	"	"	"	6 "	7 "	$\frac{16}{16}$	1 "	"	"
22	29	"	.....	.....	.....	2 yrs. Slight.	"	3 "	3 "	"	"	"	"	"	"	"	"	7 "	$\frac{16}{16}$	"	"	"
23	47	"	.....	.....	.....	No.	"	13 "	No.	"	"	"	"	"	"	"	16 "	5 "	$\frac{16}{16}$	2 1/2 "	Not known.	"
24	55	"	.....	.....	.....	Yes.	"	3 "	2 1/2 in.	"	"	"	"	"	"	"	24 "	4 "	$\frac{16}{16}$	2 "	"	"
25	57	"	.....	.....	.....	"	"	3 "	No.	"	"	"	"	"	"	"	21 "	17 "	$\frac{16}{16}$	3 "	"	"
26	68	"	.....	.....	.....	12 yrs. severe.	L.	No.	"	"	"	"	"	"	"	"	No.	No.	No.	6 mos.	"	"
27	37	F.	.....	.....	.....	Yes.	Both	O. C. 6 "	2 in.	"	"	"	"	"	"	"	12 ft.	4 in.	$\frac{16}{16}$	7 "	"	"
28	35	M.	.....	.....	.....	"	L.	3 "	"	"	"	"	"	"	"	"	19 "	7 "	$\frac{16}{16}$	9 "	"	"

No.	Age.	Sex.	Discharge.			Tinnitus.	Pain.	Vertigo.	Ear.	Hearing-power.			Results of operation.						Hearing-power.			Cause of disease.	Operation.
			Continuous.	Recurrent.	Duration.					Voice.	Tuning-fork.	Watch.	Bone con-struction.	Discharge.	Pain.	Tinnitus.	Vertigo.	Voice.	Tuning-fork.	Watch.	Time since operation.		
76	61	M.	...	...	.....	Yes.	No.	Yes.	L.	O. C. 4 ft.	2 in.	30	Normal.	No.	No.	No.	No.	O. C. 4 ft.	2 in.	No.	2 1/2 yrs.	Not known.	Mal. and inc., drum intact.
77	58	"	...	...	.....	"	"	No.	"	" 3	1 "	30	"	"	"	"	"	" 6 "	4 "	"	11 mos.	"	Mal. and inc.
78	59	F.	...	...	.....	"	"	"	"	" 6	1 "	30	"	"	"	"	"	" 12 "	5 "	"	3 yrs.	"	Mal. and inc.
79	49	"	...	...	.....	"	"	"	R.	" 2	1 "	No.	1/2 "	"	"	"	"	" 1 "	2 "	"	1 "	"	"
80	44	"	...	...	.....	"	"	Yes.	L.	" 3	3 "	"	"	"	"	"	"	" 8 "	4 "	"	2 "	"	"
81	35	M.	...	...	.....	"	"	"	R.	" 4	2 "	"	"	"	"	"	"	" 8 "	3 "	"	2 "	"	"
82	64	"	...	...	.....	10 yrs. severe.	"	9 yrs. severe.	Both	L. C. 1	No.	"	"	"	"	"	"	" 1 "	1/2 "	"	3 "	"	"
83	74	"	...	...	.....	12 yrs. severe.	"	4 yrs. severe.	"	" 2	"	"	3/4 "	"	"	"	"	" 9 "	9 "	"	12 mos.	"	Mal. and inc., drum intact.
84	67	"	...	...	.....	9 yrs. severe.	"	3 yrs. severe.	"	" 1	"	"	1/2 "	"	"	"	"	" 12 "	8 "	"	9 "	"	"
85	4	F.	Yes.	...	1 yr.	No.	"	No.	"	O. C. 8	2 in.	"	"	"	"	"	"	" 16 "	9 "	"	7 "	"	"
86	7	"	"	...	3 yrs.	"	"	"	"	" 8	4 "	"	"	"	"	"	"	" 20 "	12 "	"	16 "	"	"
87	9	M.	"	...	2 "	"	"	"	"	" 6	2 "	30	"	"	"	"	"	" 20 "	9 "	"	3 "	"	"
88	18	F.	Yes.	...	7 "	"	"	"	R.	" 16	9 "	30	"	"	"	"	"	" 8 "	1 "	"	2 yrs.	"	"
89	4	"	Yes.	...	18 mos.	"	"	"	"	" 1	4 "	No.	"	"	"	"	"	" 6 "	2 "	"	1 "	"	"
90	5	"	Yes.	...	"	"	"	"	"	" 1	4 "	"	"	"	"	"	"	" 5 "	1 "	"	3 "	"	"
91	23	"	Yes.	...	17 yrs.	Yes.	"	"	"	" 7	1 "	"	"	"	"	"	"	" 11 "	2 "	"	7 mos.	"	"
92	13	"	Yes.	...	9 "	No.	"	"	"	" 4	4 "	"	"	"	"	"	"	" No.	2 "	"	12 "	"	"
93	27	M.	Yes.	...	12 "	Yes.	"	"	"	" 7	3 "	30	"	"	"	"	"	" 2 ft.	2 in.	"	3 "	"	"
94	19	"	Yes.	...	18 mos.	No.	"	"	L.	" 4	1 "	"	"	"	"	"	"	" 4 "	3 "	"	4 "	"	"
95	28	F.	Yes.	...	11 yrs.	Yes.	"	"	R.	" 3	1 "	No.	"	"	"	"	"	" 4 "	3 "	"	4 "	"	"
96	22	M.	Yes.	...	6 "	No.	"	"	"	" 9	3 "	30	"	"	"	"	"	" 3 "	4 "	"	8 "	"	"
97	7	F.	"	...	2 "	"	"	"	"	" 4	4 "	No.	"	"	"	"	"	" 6 "	4 "	"	10 "	"	"
98	6	F.	"	...	9 mos.	Slight.	"	"	"	" 7	1 "	"	"	"	"	"	"	" 4 "	4 "	"	14 "	"	"
99	18	M.	"	...	10 "	No.	"	"	"	" 6	2 "	"	"	"	"	"	"	" 8 "	7 "	"	18 "	"	"
100	12	"	"	...	12 "	"	"	"	Both	" 12	7 "	30	"	"	"	"	"	" 7 "	2 "	"	9 "	"	"
101	4	"	"	...	9 "	"	"	"	L.	" 2	3 "	No.	"	"	"	"	"	" 4 "	2 "	"	3 yrs.	"	"
102	9	F.	"	...	2 yrs.	Yes.	"	"	"	" 6	5 "	"	"	"	"	"	"	" 4 "	2 "	"	2 1/2 "	"	"
103	49	"	Yes.	...	20 "	Yes.	"	Yes.	"	" 1	No.	"	"	"	"	"	"	" 4 "	4 "	"	11 mos.	"	"
104	27	"	"	...	17 "	"	"	"	R.	" 2	"	"	"	"	"	"	"	" 12 "	5 "	"	3 yrs.	"	"
105	12	M.	Yes.	...	4 "	No.	"	No.	"	" 4	4 in.	30	"	"	"	"	"	" 1 "	2 "	"	1 "	"	"
106	14	F.	"	...	4 "	"	"	"	"	" 8	7 "	"	"	"	"	"	"	" 8 "	4 "	"	2 "	"	"
107	26	M.	"	...	3 "	"	"	"	"	" 3	5 "	30	"	"	"	"	"	" 8 "	3 "	"	2 "	"	"
108	32	"	"	Yes.	24 "	Yes.	"	Yes.	Both	" 1	No.	30	"	"	"	"	"	" 1 "	1/2 "	"	3 "	"	"

is now justifiably demanded. From the results obtained in the class of cases that would properly come under the title of this paper, we beg to offer the following conclusions.

First, however, I should like to remark that this is an age when the public wish to exact from the profession a promise as to the definite outcome of any prospective operation. It is of course proper and desirable that the *probable* result of an operation under consideration should be fully and carefully explained to the patient and his friends. It is well, however, that this should be done in the presence of your assistants or other auditors. A disregard of this simple precaution has caused some honorable physicians, who had worked hard for the best interests of their patients, to be summoned into court by designing and evil-minded persons, who enter suit for damages because a supposed promise had not been fully realized. We would, therefore, begin our conclusions with,—

1. Never promise positive results from an operation on the ear for the relief of tinnitus, pain, suppuration, and vertigo. This promise will often be exacted, but the present status of such surgical procedures is not sufficiently defined to warrant us in promising the results which we may hope to attain.

2. Probably no operation in the entire range of surgery (*if carefully performed*) is attended with so little disturbance, either local or constitutional, as excision of the membrana tympani, malleus, and incus, when not complicated with necrosis of the tympanum; in fact, there are very few diseased conditions of the human economy that are so prone to be productive of good results as is excision of the membrana tympani and ossicles in certain ear-diseases.

3. Tinnitus, vertigo, impairment of hearing, and pain are almost certain to be relieved by the removal of the drum and ossicles, if not dependent upon some structural changes in the internal ear.

4. The longer the middle-ear disease has existed (as characterized by tinnitus, progressive loss of hearing, pain usually not well defined, and possibly vertigo) the greater is the danger of some serious structural lesion of the internal ear, and therefore the less hope of materially improving the hearing-power; and yet, even in extreme cases, the tinnitus, vertigo, and pain are more or less benefited, sometimes markedly so.

5. If, after due and proper efforts to relieve progressive aural diseases, you do not produce a speedy and marked improvement, no time should be lost in performing the radical opera-

tion; for by delay an internal ear complication may have become established, and this always makes probable benefit more doubtful.

6. It is not well to express too much hope that the operation will materially improve *hearing* in long-standing, non-suppurative cases; and yet, when the chances are so much in favor of its producing entire freedom from tinnitus and vertigo, and especially since there are such great probabilities of a rapidly-progressing disease becoming arrested from the date of operation, it would indeed seem unfortunate if such patients were not offered the benefit of this doubt, if such it can be termed.

7. In all cases where the membrana tympani is thickened, markedly retracted, and made firmly adherent by old inflammatory products to the tympanic walls, and where in this same connection you find the ossicles completely ankylosed, the function of these parts under such circumstances is of course entirely suspended; therefore, in consequence of this condition, this part of the conducting apparatus can be regarded only as a foreign body, and, as such, the only rational hope for relief is through removal, which will in the majority of cases relieve tinnitus and vertigo, while at the same time improvement in hearing can reasonably be expected on account of the opening thus formed admitting the sound-wave which impinges directly on the stapes and fenestra rotunda.

8. As a preventive of necrosis of the temporal bone, mastoid abscess, aural polypi, and serious brain-complications (when the result of chronic aural discharge), the suppurating ear should not be allowed to continue and thus become chronic. If, therefore, under the usual methods of treatment the discharge does not permanently yield, it is certainly good, and I might say imperative, surgery to promptly extract all fragments of the membrana tympani and necrotic ossicles, for in so doing you have taken the only rational step to produce a cure of this always dangerous discharge by first removing all foreign matter and thereby establishing a free drainage, and, furthermore, giving an opportunity of properly treating a diseased cavity that otherwise would be inaccessible; and inasmuch as the writer has not met with any failures in this class of cases (when unaccompanied by extensive necrosis of the tympanic cavity), he is forced to express the belief that *timely surgical interference* cannot be too strongly urged, for by so doing you eradicate the primary disease, and thus prevent these always serious and oftentimes fatal complications.

JANUARY 16, 1893.

WHOLE SERIES, VOL. XVII.

No. 1.

THIRD SERIES, VOL. IX.

— THE —
Therapeutic Gazette

A MONTHLY JOURNAL

— OF —

General, Special, and Physiological Therapeutics.

GENERAL THERAPEUTICS.

H. A. HARE, M.D.,

Professor of Therapeutics in the Jefferson Medical College.

OPHTHALMIC AND AURAL THERAPEUTICS.

G. E. DE SCHWEITZ, M.D.,

Clinical Professor of Ophthalmology in the
Jefferson Medical College.

SURGICAL AND GENITO-URINARY THERAPEUTICS.

EDWARD MARTIN, M.D.,

Clinical Professor of Genito-Urinary Diseases, University of
Pennsylvania.

EDITORIAL OFFICE, 222 South Fifteenth St., Philadelphia, U.S.A.



Subscriptions and communications relating to the business management should be addressed to the Publisher,

GEORGE S. DAVIS, DETROIT, MICH., U.S.A.,

OR

714 Filbert Street, Philadelphia, Pa.

Published on the Fifteenth Day of Every Month.

SUBSCRIPTION PRICE, TWO DOLLARS A YEAR.

Agent for Great Britain: Mr. H. E. LEVINE, Medical Publisher and Bookbinder, 126 Cover Street, London, W. C.

Entered as the Post-Office at Philadelphia, Pa., as second class mail matter.
Copyright, 1892, by GEORGE S. DAVIS.

PRINTED BY S. A. LIPPINCOTT COMPANY, PHILADELPHIA.