are advised and deliberately carried out with no end in view but the alleviation of some so-called imaginary complaint. In all these measures the physician intentionally deceives. What is worse, he does so where deception is not indicated. The writer has carried out or aided in the performance of such and similar measures at the advice of men in whose minds hypnotism is an abomination and psychotherapy an avocation for visionary minds. It used to furnish a never-failing source of table talk and merriment in our hospital days that one or the other patient was fooled into the conviction of relief by all sorts of bizarre even cruel methods. The neurasthenic was in the ultimate analysis a kind of malingeringer, the imaginary ailment something ridiculous or blameworthy.

Is it more scientific to lay violent hands on a case of hysterical aphonia and ply the larynx with electric shocks, the while shouting "speak," or to endeavor to reawaken the inhibited function by quiet verbal suggestion alone? Is it safe or sane to put up the hysterical contracture in plaster under anesthesia, and dangerous or superstitious to reach the same result by reasonable suggestion or even hypnotism? Must one be classed a visionary if he strive for the same results by the gentler though more difficult and certainly more rational purely psychotherapeutic methods without deception?

The quacks are ever with us who invest some object with curative value, though this variety of fraud has, like Perkins and his tractors, largely passed into the history of superstitions to make way for the proprietary medicine man. But are we much less culpable in treating the individual by an indifferent method which we know represents only such curative force as we give it through suggestion? In giving a "bluff wafer" with spoken assurance, are we not sinfully close to the nostrum vender who sells a sugar capsule with printed advice?

For the hundredth time be it said that this is no argument to abolish or even lessen sound therapy of any kind as indicated. Surely it cannot be too often repeated that careful diagnosis is as important to this subject as to any in the range of medicine, and that suggestion must not supplant reasonable medication.

To conclude, the average physician may employ suggestion at its full value without charlatanism, without mysticism, without deception, in common-sense suggestive treatment. The patient who leaves a hospital with the delusion that he has been drugged to sleep by virtue of a capsule containing powdered sugar is in a sense no better off than the one who leaves with a discharging sinus or a crutch. It should be our endeavor to supplant the bread pill, the "bluff wafer" and the sterile water hypodermic injection by verbal suggestion, or, if time be lacking, use these helps only until such time as we can tactfully give to the patient the key to his functional disorder. We may use these means to distinguish between what is functional and what is organic. But once the condition is clear, the patient should be given the use of that power

with which suggestion has invested the bread pill or the water "hypo."

For the competent, there is still hypnotism where the weaker suggestion fails. Is it vain to hope that this generation shall see many hypnotists in this country, who, like anesthetists, devote their time to this specialty and in particular to the difficult cases? There is need of men who can write and talk intelligibly to their colleagues. Most of us fail to sympathize with the possibly honest, though flatulent, writings of certain professed hypnotists, to whom, with averted faces, yet with the hope of cure, we refer our wrecks of the drink and drug habits.

A CASE OF FALSETTO VOICE AND ITS RELATION TO SPASTIC APHONIA.

BY ABRAHAM MYERSON, M.D., ROXBURY, BOSTON.

THIS case, from the Neurological Department of the Boston City Hospital, and reported through the courtesy of Dr. John J. Thomas, presents what is in itself a rare condition, but which becomes not only interesting, but important, through its relationship to a common class of cases. The functional disorders of speech, in common with the rest of the subject-matter of medicine, have received the earnest attention of specialists, and it is through their efforts in this field that we owe what is fast becoming scientific and coherent knowledge of speech defects. Most of the work has been done abroad, and although this country can boast of one or two brilliant investigators, we are far behind Europe, both in the recognition and treatment of this class of cases.

The patient, a boy of Franco-American descent, presented himself at the Out-Patient Department in October, 1908, and was at that time fourteen years of age. The family history is good, there being no hereditary disease or marked pathological predisposition amongst his near kindred. He went through childhood without other than the usual diseases, is of average intelligence and, according to his mother, of even, sunny temperament. Five months before he appeared at the hospital, at about the time he first started to grow rapidly, he caught a cold of more than ordinary severity, involving nose, throat, larynx and chest. During this attack, in addition to pains in his joints, and fever, he was very hoarse and gradually lost his voice, a symptom which aroused no anxious attention until its persistence after the subsidence of the other troubles made it conspicuous. Before the "cold" his voice was undergoing the changes usual to puberty, i. e., the grotesque and irregular break from the high-pitched voice of boyhood to the deeper one of youth, but after it there was almost no power of voiced speech. He was examined in the Throat Department and referred to the neurologists with a note stating that there was nothing in his nose or throat to account for the aphonia.

The notes taken at that time in the Nerve Department state in addition to the above that there was no difficulty in swallowing either liquids or solids, and that there was nothing indicating a peripheral neuritis. The visual fields were normal; there was no disturbance of sensation anywhere on the body, except for a doubtful diminution to touch and pain upon the hard palate.

In short, except for an inability to speak in other than a harsh whisper, the examination was practically negative. Nevertheless, in view of the aphonia and its occurrence at puberty, the condition was diagnosed as hysterical in origin, since the tendency to require the presence of the so-called stigmata for such a diagnosis is becoming less marked year by year. His mother was instructed to neglect the symptoms, and he was given strong faradic shocks to the throat. At the end of two months of varied electrical treatment, there being no improvement, he ceased to come to the hospital.

In September, 1909, about ten months later, he reappeared, declaring that there had been no improvement in his voice, a fact that became evident when he spoke. It was then noticed that his voice was not a pure whisper, but was tinged with an extremely thin and high-pitched squeak. In other words, there was cord tone present, but it was distinctly falsetto in character. The nearest approach to his voice is the noise made by the old-fashioned peanut roaster in which the sound made by the escaping steam blends with the shrill, plaintive note of the whistle it blows. The examination at this time disclosed the following facts:

The boy is about five feet four inches tall, pale, thin, worried looking. He stands with shoulders drooping forward, and the normal muscular tonus of the body is markedly diminished. This lack of tone prevails until he attempts to speak, when it is replaced by a general spastic condition of the organs of voice and respiration. The larynx is drawn up almost as high as the chin and held there by a firm contraction of the elevators of larynx and the hyoid bone. The upper chest becomes rigid and the accessory muscles contract as if being used. The diaphragm probably shares in the general spasm, for although this cannot be directly ascertained without the use of the graphic methods, yet the upper abdomen has not the easy rise and fall present in normal speech effort. Another laryngeal examination discloses no abnormality in the action of the cords. With this data as a basis, the condition was diagnosed as falsetto voice in the male.

In brief, the treatment was directed toward relaxation of the spasm shown to occur in attempts to speak. To that end he was stripped, placed in a supine position upon a table and shown how to use his diaphragm in breathing. After fifteen minutes' instruction he could do this fairly well and was then given exercises for the control of the expiratory blast. At the first treatment these were merely long, gently whispered vowel sounds. At the second, after a day of practice in these exercises, and of complete abstinence from other speech effort, these exercises were further advanced by the voiced pronunciation of the vowels, the finger of the instructor holding down the larynx. His progress was so rapid that the third treatment was merely an extension of the use of the voice in the combination of vowels and consonants used in normal speech and he was discharged as cured. Curiously enough, his voice now has none of the "breaks" to falsetto common at puberty, but is a good and constant baritone which at first startled him by its depth.

The functional disorders of speech may be roughly grouped according to causation into two great classes. The first class comprises those cases in which through defective hearing or training the child has not learned to enunciate or has acquired slovenly or inaccurate enunciation. This class would, therefore, include such cases as are illustrated by the mute, the various kinds of

lisp, etc. The second class, perhaps more properly called functional, since it may be claimed that there is an organic basis for the first class of cases, is that due to functional nervous disorder, e. g., hysterical and other aphonia, stuttering, falsetto, mutism, etc. Of these two classes, the first presents no mystery, for it is very evident that speech is not an innate power of the human being and is dependent for its perfection upon proper teaching and upon proper organs for the reception of instruction. The second group of cases, occurring as it does in individuals whose hearing and speech organs are normal, presents the same problems that await solution in the more widely known functional nervous disorders. We are still in the dark as to the nature of the nervous defect, which we term a neuropathic predisposition, or, in certain cases, dissociation, hysteria, but, thanks to the brilliant work of modern investigators, the actual muscular mechanism, which is the immediate cause of most of the disordered speech, has become known. It is noteworthy that here, as in all research, a unity of mechanism has been established for seemingly discrete disorders.

Before discussing the mechanism of the falsetto voice, it is logically necessary to describe the "mother" group of cases to which it belongs. For a long time it has been known that stuttering is a spasmodic affection, and while it has usually been considered as primarily a laryngeal and oral trouble, it has been often remarked that in severe cases the spasms extend not only to the other muscles of respiration, but to the face, arms, legs and to the smooth muscles of bladder and rectum. It was only through the use of instruments that recorded graphically the movements of the diaphragm, chest and larynx during speech and respiration that it was learned that all these parts were involved in practically every case of stuttering. It was found, too, that the cases ranged in severity from the "initial stop" defect and the repetition of the vowel sounds to cases in which absolute aphonia occurred, and that the same mechanism explained all of these. The pioneers in this work were Schnitzler, Juraz, Mackenzie, Nothnagel, Simon and many others, but it was Herman Gutzmann who first introduced the use of pneumograph and kymograph and by his energy and acumen gave definiteness both to the diagnosis and treatment of these disorders.

Under the heading of "spastic aphonia" this author describes a group of cases which present the following general characters: First, the patient is usually of a neuropathic disposition and his previous history and antecedents show this in various ways — chorea, migraine, tics, twitchings, etc. Second, the exciting cause of the trouble is usually illness, fright or professional over-use of the voice. Third, there results from these two, predisposition and immediate cause, an aphonia, more or less complete, ranging from reduplication of vowels to loss of voice and even mutism. The condition fluctuates in severity according to such circumstances as the bodily vigor at any given moment, embarrassment, excitement, etc. Fourth, the laryngoscope may show no change in cords,

but usually there is defect both on inspiration and expiration. The first part of the respiratory act is often noisy, is more rapid during phonation than in repose, and the usual pentagonal opening of the glottis is changed into a triangular opening, showing spasm. During attempted phonation there may be complete occlusion, not only of cords, but of ventricular bands (false vocal cords). Fifth, the graphic records taken at larynx, chest and diaphragm show that the ejected current of air is irregular in its movement, and that often there is an inspiratory interruption of the expiratory blast, which is probably an attempt to overcome the spasm.

The term of "spastic aphonia" was subsequently extended to all the speech defects attended by spasm, particularly by W. Oltuszewski, who gave it its broadest significance. Not only did he include the various kinds of stuttering and the functionally caused aphonia and mutisms, including some hysterical cases, but he allied to this group by the similarity in cause and symptoms the cases of falsetto voice in the male. Others than this author have recorded cases of eunuchoid voice, particularly Makuen, Clark, Biaggi, Gutzmann and Fournier, but none of these others has shown quite so clearly the relationship of this disorder to the great group of spastic aphonia. In order to correctly understand these cases, it is advisable to review not only the mechanism of normal falsetto voice, but also to recognize that the old conception of the mechanism of tone production is giving way to one established by better methods of observation.

The old opinion, still held by many, was that cord tone depended upon the vibration of the true vocal cords in the current of expelled air, just as strings set in motion by the finger or a bow emit musical notes, with a pitch that is high or low in inverse relation to the length of the strings. In fact, the cords are wrongly named, for they are but the edges of membranes that stretch across the larynx. Müsehold investigated the action of the vocal cords by means of photographs and by the use of the stroboscope, an instrument that gives any desired rapidity to the passage of views so that the study and analysis of rapid movements is made feasible. He found that it is not the vibration of the cords which produces the vocal tone, but that it is the alternate compression and expansion of the air expelled by the respiratory muscles which brings about voice. In other words, to use the terms of E. Scripture, who agrees with Müsehold, the series of expiratory puffs pushes open the vocal cords, which have a cushion-like action with a vibratory movement that is secondary to the puffs of air and is more lateral than up and down. In breast register, states Müsehold, the cords have the form of a roll thicker in the middle, and the opening is a very small line, while in falsetto the vocal cords are further separated and the vibration of the cords occurs only at the edge and has but little amplitude.

The views of the earlier writers on falsetto are as many as the number of men holding them,

Oltuszewski, however, agrees with Müsehold and adds some of the phenomena of spastic aphonia to the list of observed and recorded changes. In most of his cases he found on laryngoscopic examination during phonation an elliptical split posteriorly. He believes that the main factor in the production of this voice is the increased tension of the cords brought about by spasm of the crico-thyroid muscles, and in this opinion he is confirmed by Fischer and Miller, who carried on a series of investigations by means of the x-ray. In other words, he believes that these cases differ from those described under the heading of spastic aphonia only in the greater localization of the cramp in the crico-thyroid muscles and in the absence of any liability to stuttering. Considered in this light, the prognosis of these cases is excellent, and the good results reached are as startling as the means by which they are reached are simple.

Gutzmann proceeds along the following lines in treatment of his cases:

1. He teaches the patients to prolong both inspiration and expiration, but particularly the latter, and has them raise their arms to the level of the shoulders during the first act of respiration, and to lower them during the second. Then he allows them to whisper the expiration.

2. After the records show a smooth inspiration and expiration, he teaches the patients intonation. At first he has them gradually introduce into the whispered voice the cord tones, that is, the phonetic effort begins as a whisper and ends in the desired voice. Next, he has them get their cords in the desired position first, and then he has them intone.

3. Then comes systematic practice in vowels and consonants, from the vowels alone to combinations with the nasal sounds, then with the silent surds, then with the silent and voiced occlusives, etc.

That these cases differ from those usually described as hysterical aphonia is evident. In the latter the cords are generally in an abducted, the cadaveric, position, and in attempts at phonation are immobile. G. Royer explains this as being the result of interference with the cord centers by the mechanism of hysteria, and since there is a cerebral center for adduction and none for abduction, it follows that the majority of cases are of one type. Nevertheless, on the analogy of other hysterical paralyses, there probably are spastic paralyses of the cords, and some of the spastic aphonia are undoubtedly hysterical in nature. How to differentiate those that have this origin from those having the more general and less defined neuropathic background as a cause is not made clear by the writers, although Killian believes that in the non-hysterical forms the ventricular bands share in the spasm, while in hysteria only the true cords are cramped. This is denied by Gutzmann, after quoting Killian. The difficulty is increased by the fact that the so-called stigmata of hysteria are very often absent in cases undoubtedly of this origin. Here the "therapeutic test" as a means of diagnosis is

the court of last resort, i. e., the response to suggestion and hypnosis.

As to the underlying mechanism, it becomes very convenient to say "neuropathic constitution" and to delve no further. A very suggestive statement of E. Scripture comes to the writer's mind. He says that in normal fatigue of the voice there is a compensatory tension of the muscles of the respiratory tract, just as when one's hand wearies of writing the fingers grasp the pen with greater firmness. In fright and shock, even in normal individuals, there is a great tenseness of the muscles of respiration and voice, evidenced by the sudden mutism or at best the hoarse whisper of fear. The neuropathic individual is characterized by the abnormal persistence of such adaptations long after their exciting cause has ceased to operate. It then becomes necessary to educate him to re-adapt himself to his normal environment.

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Massachusetts General Hospital.

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EXPERIENCES WITH DIGIPURATUM.

BY W. F. BOOS, M.D.; L. H. NEWBURGH, M.D., AND H. K. MARKS, M.D.

DIGIPURATUM (Extractum Digitalis Depuratum-Knoll) is a new digitalis preparation. The drug is a leaf extract physiologically standardized and said to be free from the substances which cause gastro-enteric disturbances.

Digipuratum was used in twenty cases of cardiac disease on the two medical services of the Massachusetts General Hospital. The cases were taken as they came to the hospital, and most of them were very severe in character. The drug seemed to act much more promptly than any preparation of digitalis employed heretofore by mouth, compensation being re-established in many cases after four days. Digipuratum, which is best given in tablet form, was readily taken by all the patients and none of them showed the slightest gastro-enteric disturbances. The marked effect on diuresis was particularly gratifying and although the drug was pushed heavily in many instances, cumulative poisoning did not appear in any of the cases. In the few cases in which digipuratum did not show results, all the other drugs employed were equally powerless.

A detailed report of the cases is soon to be published.

A CASE OF CARDIAC DROPSY OF LONG STANDING TREATED BY DIGIPURATUM AND DIURETIN.

BY WILLIAM H. SMITH, M.D.

A MAN of sixty-seven with an unimportant family and previous history entered the Massachusetts General Hospital in the service of Dr. F. C. Shattuck. His present illness is as follows: For six months he has had gradually increasing dyspnea, dizziness and swelling of the legs; for five months he has had orthopnea, cough and at times blood-tinged sputum; for two months dull pain has been present in the left chest, while for five weeks there has been edema and swelling of the genitals. The dyspnea and orthopnea have been extreme the three days before entrance.

Examination at the time of entrance, Oct. 24, 1909, showed a well-developed and nourished man, with arteriosclerosis, with marked failure of compensation, hydrothorax, ascites, liver engorgement and brawny edema of the legs. The urine was that of passive congestion, the blood normal, the blood pressure 185. Temperature, 94.6; pulse, 95; respiration, 50 at entrance.

He was put at once upon digipuratum, four tablets, each of 1½ gr., the first day; three tablets, the second and third days; and two the two following days. His urine, which had been relatively small in amount, rose the fourth day to 190 oz. in the twenty-four hours. There was very marked improvement in his condition, the edema of his legs disappeared and the heart sounds became louder, although there was little change in the rate. Unfortunately, it cannot be definitely stated that such rapid and marked improvement was due to the digipuratum alone, as he was put upon diuretin, 15 gr., every four hours two days before the marked diuresis occurred. The striking thing is that in a case of senile heart with failure of compensation existing for months such a rapid improvement should occur, whether due to the digipuratum alone or in combination with the diuretin.

He was discharged relieved Nov. 8. It is important to remember that, in order to maintain compensation in these cases, some preparation of digitalis must be used for a considerable time after compensation has been established.

A CASE OF CHOLECYSTENTEROSTOMY.

BY F. G. BALCH, M.D.

MRS. MARY J. MCG. was referred to me by Dr. Kennedy and Dr. Granger, of Woonsocket, in July, 1909. I referred her to the Massachusetts General Hospital. Her mother died of bowel trouble. She has six sisters and two brothers living and well, a husband and four children living and well. One child died of water on the brain, and she had had one miscarriage. She went through the menopause a year ago, but had never been sick until her present illness.

Four months before I saw her she noticed that the urine was a peculiar color, a sort of brownish-red. Some time later her friends noticed that her eyes were yellow and she was persuaded to see a doctor. Two weeks later her skin began to itch. Three weeks before she came to see me she began to have distress in the epigastrium and vomited green material once or twice. She has had no attacks of sharp pain, but the epigastric distress continues. Her bowels are constipated and movements are light colored. She has a good appetite but is afraid to eat on account of the distress. In the last four months she has lost a good deal of weight,