violet, 1 part. This modification often gives beautiful results. The cocci, however, decolorize easily and the tannic acid-gentian-violet may be followed by carbol-gentian-violet and then the usual procedure. Ordinary carbol-fuchsin, diluted 5 to 10 times and aqueous eosin (50 per cent. sat.) may also be used to stain the capsule, although the saturated alcoholic (60 per cent.) eosin has given the best results. Decolorization after the modified Gram procedure of tannic acid-fixed smears is more rapid than in the case of heat-fixed smears, which should be borne in mind.

By the use of this method it has been determined that the capsule of the pneumococcus and allied organisms is not difficult to preserve or readily soluble in water, as is generally believed. To stain the capsule is a problem of rendering it stainable rather than one of preservation. The reactions which render the capsule stainable appear to be colloidal reactions.

150 Michigan Avenue.

A PROBABLE CASE OF ANAPHYLAXIS

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In view of the present experimental investigations into the nature and occurrence of the reaction of anaphylaxis, and of the importance of the question to human serotherapy, it is important that clinical record be made of all observations bearing on the phenomenon. The following case of illness, not clearly understood at the time of its occurrence, now appears clearly to have been an instance of anaphylaxis, and is therefore reported.

The subject of the condition, a physician in San Francisco, in the winter of 1900-1 performed an autopsy on a case of bubonic plague. The body was that of a white man, and the history and location of the house in which the illness occurred led to no suspicion as to the nature of the disease. It was, in fact, the first death of a Caucasian that occurred in California from bubonic plague. No precautions were taken in the performance of the necropsy, and when on its completion the appearance of the organs and the microscopic findings of bacilli definitely determined to correspond in all morphologic features to the plague bacillus led to the diagnosis of plague, it was felt that the degree of exposure had been so great as to warrant the use of the Yersin serum. This was accordingly injected, 30 c.c. being used. Infection with plague did not occur, and in the course of time the incident was quite forgotten.

Nearly five years later the same physician was hunting deer in the mountains of California, in company with another man, the men having with them two horses. One of the horses, being green to the chase, resisted the efforts of the hunters to strap a dead buck on its back, and a lively tussle took place, during the course of which the physician had his forearms and hands badly scratched and lacerated by the metal parts of the bridle of the horse. On his return to the city a few days later, as he did not feel satisfied with the condition of the wounds, which had not been properly cleansed of the horse hairs and dirt from the horse, and which had not been treated with an antiseptic at all, these were all thoroughly cleansed, disinfected, and 20 c.c. of antitetanic serum injected as a prophylactic.

For a number of hours after the injection of the tetanus antitoxin, nothing was noted. Then suddenly the man was stricken with a universal, giant urticaria, with profound prostration. The attack lasted in its acute phases four days, the symptoms and signs being as follows:

1. *Giant Urticaria*.—This was very marked, the body being at times swollen almost past recognition. Three times the condition receded in part, only to recur with renewed violence. Following the acute attack, the skin did not reach its normal

condition for ten days. The usual symptoms of this condition were present in great intensity, itching being almost intolerable.

2. *Tachycardia*.—With a normal temperature, the pulse during the attack ranged about 130 per minute. Physical examination of the heart elicited no abnormal signs other than the excessive rate.

3. *Diarrhea*.—A diarrhea of choleraic violence occurred, accompanied by the passage of large exfoliations or membranous casts of the intestine. This condition lasted for three days.

4. *Neuritis*.—On the night of the third day, a sudden sharp pain was felt in the right deltoid region, the skin over which soon gave evidence of anesthesia. Palsy in the muscles supplied by the circumflex nerve rapidly developed with the regular signs of a circumflex neuritis. The muscles wasted, gave typical reactions of degeneration, which, with the cutaneous anesthesia, persisted for months. Recovery, which finally occurred, was not complete, and there exists still some functional disability in the use of the deltoid and of the muscles lying between the deltoid and the spine of the scapula. Whether the neuritis was confined to the circumflex or extended to other branches of the plexus, does not concern the present report.

5. *Prostration of the Neuromuscular System*.—This may have been due, in part at least, to the diarrhea. Following recovery, however, the man was for a number of weeks profoundly asthenic.

The subject of this attack has never had any difficulties with asthma, nor has he ever been in the least "sensitive" to horses. The probable interpretation of the attack as an instance of anaphylaxis is based on the history of the two injections of horse serum with an interval of five years, and of the resemblance of the attack to the features of experimental anaphylaxis. It would be of great importance to determine whether now, after a further interval of five years, the individual is still "sensitized." Instructive as the results of an injection of horse serum at this date would be, the subject declines the experiment.

4522 Locust Street.

A CASE OF AIR EMBOLUS OCCURRING DURING OPERATION UNDER AIR-INFLATION URETHROSCOPY

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Some years ago I introduced to the profession my air-inflation urethroscope, and since that time I have been consistent in my advocacy of this instrument for both diagnostic and operative purposes. Within the past year, however, I have observed certain phenomena which have led me to question the wisdom of intra-urethral operations carried on under air-inflation. I have, therefore, taken advantage of this opportunity to sound a note of warning to users of this method.

Fenwick, in urethroscoping under air-inflation a stricture complicated by recent false passages, noted an emphysematous condition following, and speculated on the possibility of serious associated conditions. His description, quoted by William R. Fox,¹ is as follows:

I examined with inflation a patient who had had profuse bleeding from attempts at catheterism some few hours before applying to me for relief. I was able to find the opening of the false passage with ease. It lay just below the pin-point orifice of the strictured part of the urethra, and it appeared as a bloody-edged, ragged slit. But the patient called out almost immediately that something was running down the

1. The Urethroscope: Its Development and Its Use. Australasian Med. Gaz., Oct. 20, 1906.

inside of his thighs, and I then became aware that air was passing freely through the opening of the "false passage" and escaping into the tissues of the perineum. There was no doubt but that the false passage was very extensive. No ill results ensued, but it is easily conceivable that damage of a grave description can be inflicted by unfiltered air passing over an inflamed surface and opening up extensive cellular planes in the thighs, perineum and pelvis.

Within the past year, while opening up infected follicles in the anterior urethra, I have observed two cases in which localized emphysema in the cellular tissue of the pendulous urethra occurred as a result of the air-inflation used during the operation. In neither of these cases was the local condition marked, nor were there any generalized symptoms. In both cases the emphysematous condition gradually disappeared within a few days without giving rise to any untoward symptoms.

In the following case, which forms the basis for this report, the emphysematous condition was so extensive, and the immediate symptoms so alarming in character, that a fatal issue seemed unavoidable. The possibility of similar complications arising in other cases of a like character has led me to the belief that extreme caution should be used in all intra-urethral or intravesical operations performed under air-inflation.

F. H. B., Douglas, Arizona, aged 35, married, family history negative, gave a history of intermittent urethritis for the previous fifteen years. The patient was first seen on Oct. 3, 1910.

Examination showed typical chronic urethritis of the antero-posterior type. Urethroscopy disclosed diffuse infiltration, a few infected urethral follicles tending to become cystic, and a band-like stricture on the floor of the urethra just anterior to the peno-scrotal junction.

After preliminary treatment, the air-inflation urethroscope was introduced October 12, and preparations were made for dividing the stricture through the urethroscope. The strictured area was cocaineized by the application of a 2 per cent. solution, and after a few minutes the urethra was inflated with air and the stricture divided. An emphysematous condition of the cellular tissue in the neighborhood of the stricture was noted and almost immediately the patient complained of pains in the epigastrium and began to cough. He became rapidly cyanotic and the radial pulse became imperceptible. Auscultation over the cardiac area revealed the "whirr" of what was apparently considerable quantities of air passing through the heart. The heart-sound rapidly became feeble and then could not be detected. Respiration quickly ceased, not suddenly but progressively, as in the dying. The pupils were fully dilated and the eyes were fixed; in fact, the whole appearance of the patient was that of a cadaver.

Artificial respiration was employed and whisky administered hypodermatically. Within a short time feeble signs of returning life were noticed and the patient gradually recovered consciousness, though some air could still be heard whirring through the heart. The patient still complained of a feeling of oppression in the epigastrium and this feeling was noticeable in a gradually diminishing degree for a period of about one week.

The local emphysema was not marked and seemed to involve only the cellular tissue of the pendulous urethra. There was no emphysema of the scrotal tissues.

On the following day the patient complained of tenderness in the hypogastrium, especially marked on the left side. Examination revealed a fairly extensive emphysema of the abdominal wall, which slowly disappeared in about one week. No other symptoms of an untoward nature were noted.

There can be no question but that the causative factor of the serious symptoms in this case was air embolus. It is, however, astonishing what an amount of air was forced into the circulation without a fatal issue. This case cannot be regarded as merely an "accident" occurring during operative urethroscopy under air-inflation,

though like symptoms have never been noted in my experience in similar operative work, which covers several hundred cases. Like "accidents" appeal to me as being ever-present possibilities in such work, and I would urge extreme caution in the employment of air-inflation urethroscopy for operative purposes.

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THE CAUSE AND TREATMENT OF DEFECTIVE MUTATION OF THE VOICE

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The change of the voice at puberty sometimes goes on improperly, and the young man acquires a high, falsetto tone instead of the regular tenor or base. The condition is very troublesome to the business man, and is particularly obnoxious in public speakers, clergymen, lawyers and military officers.

An examination of the larynx in such a condition shows the vocal cords to be excessively shiny and white, and apparently very tightly stretched. An external examination shows that in speaking or singing the larynx is pulled high up under the tongue and often rather forward toward the chin. The condition is evidently due to overcontraction of both the intrinsic and the extrinsic muscles of the larynx, whereby the vocal cords are stretched too tightly. The overcontraction is found only during singing and speaking. It is a purely nervous habit.

The treatment begins by teaching the person to sing on very low tones. At first the tones will be harsh and rattling, but they will gradually become natural. The pitch of the song is gradually raised until the patient sings over the normal range of voice. Another exercise consists of chanting sentences on a single low tone, which is gradually raised in pitch in successive exercises. A third exercise consists in singing the first word or two of a sentence on a low tone and finishing it by speaking. In a fourth line of work, exercises in singing and speaking are used while the patient presses the larynx down and backward by putting his fingers on the hyoid bone and on the notch at the front of the thyroid cartilage.

With such direct methods of treatment it is possible to eliminate the defect entirely, usually in a very short time. The cure is often completed in one or two weeks.

87 Madison Avenue.

Therapeutics

DRUGS USED TO ACT ON THE CIRCULATION

No part of the body is more maltreated medicinally than the heart. Some of such mistaken treatment is due to carelessness, some to lack of proper diagnosis and understanding of the pathology of the condition, while at other times it is due to an entire misunderstanding or ignorance of the action of the drugs used. At still other times there may be the most careful discrimination and the best possible judgment combined with a thorough understanding of the condition of the heart and circulation of a given patient, and still a drug will be used that does harm instead of good, or used in too large amount, or in insufficient amount. In other words, with all the knowledge we can bring to bear, it is not always possible to decide exactly what a heart and cir-