of 10 c.c capacity and numbered to correspond with the
gastric extracts tested, as well as the controls, arc set in
racks. Into each of these tubes is measured, by means of
a graduated pipette, 2 c.c. of the glyctryptophan-
gastric-extract mixture lying below the toluol in the
recently incubated tubes. To each tube are then added
three drops of a 3 per cent, glacial acetic acid in distilled
water solution. The tubes are well shaken. Brimon
vapor is allowed to flow into each tube until it appears
amber yellow above the contained fluid. The tubes are
again shaken. Examination by daylight (preferred) or
by white, artificial light is now made for evidences of the
characteristic rose-pink reaction between the amino-acid
(tryptophan) and the bromin.

TRYPHTOPHAN TEST

As suggested by Weinstein,* this is made, as routine,
on the fresh gastric extracts, inasmuch as occasionally,
swallowed saliva, amino-acids, regurgitated duodenal
contents and the like may give the bromin vapor reac-
tion, before incubation or without the addition of a
dipeptid such as glyctryptophan. Five c.c. of each
fresh, filtered gastric extract is poured into test-tubes of
10 c.c capacity, acidulated with the 3 per cent, acetic
acid solution and treated with bromin vapor as above.
If no characteristic rose-pink color results, the tubes are
incubated with the corresponding specimens that have
been mixed with glyctryptophan solution. For accurate
work, it has seemed best to us to cover these "tryptophan
test" contents with a layer of toluol. At the end of
fifteen, twenty-four and forty-eight hours, note is made
of changes in color, and these results are compared with
those obtained with the preparations in the first series.

Advantages of the modification:
1. The expense of the test is reduced to one-tenth of
the commercially marketed, sealed bottle method. This
is a considerable saving where hundreds of tests are made
as routine, or where frequent tests are made in a given
case.
2. Interpretation of color-changes in the thick-walled
glass bottles is often difficult. Slight changes in color are
readily distinguished in the small, thin glass test-
tubes.
3. Breakage is not infrequent where the thick-walled,
sealed bottles are used. This means another test-bottle
or a questionable result.
4. Occasionally 10 c.c. of filtrate, as required by the
bottle method, cannot be obtained. If less be used, the
extract may not contain sufficient enzyme to hydrolyze
the glyctryptophan.

A SIMPLE METHOD FOR MAKING CARBON DIOXID
SNE—AHLBORN

MAURICE B. AILBORN, M.D., WILKES-BARRE, PA.

I have found all the methods for the production of carbon
dioxid snow to be extremely unsatisfactory, as with a piece
of chamois skin over the vent of the tank nothing could
be produced at best but soft snow, which was almost melted
by the time one kneaded it into a mold or crayon. Filter-paper
tubes and other porous materials gave little satisfaction
because of the frequent bursting of the paper, to say nothing
of the necessity of snaddling the cone of paper with towels
or other insulting materials during the flow of gas from
the vent. I found that in the first place titing of the gas tank

to an angle of about 45° gave a sufficient pressure at the vent
to insure utilization of all the gas contained in liquid form
in the ordinary tank of carbon dioxid, used in drug stores
for soda-water charging, which can be purchased in any town
from the local druggist, in varying sizes. The commercially
exploited apparatus for the production of carbon dioxid snow
is costly and because of the trouble and expense involved in
the use of a small tank of special size, which is soon emptied,
is unsatisfactory for men who live outside of larger cities. Some
simpler method of producing this material quickly and
cheaply, in sufficient quantity for practically any use, was
greatly needed. In the first place some form of holder was
necessary for the ordinary-sized tank used by the drug-stores,
which would support it firmly at the right angle, allowing it
to be moved about easily (as these tanks are somewhat explo-

* For other articles on the method of making carbon-dioxid snow
1205; Aug. 7, 1909, p. 459; March 6, 1909, p. 786; Feb. 6, 1909,
p. 464.
the vent (Figure 3). There should be no pin-holes in the glove-finger. The wrench is placed on the tap of the tank and turned gradually until a moderate stream of gas enters the finger and balloons it just to tightness, as further pressure will do no good and will usually end by bursting the finger. In about a minute the finger will feel as if filled with putty, which means that the snow is forming right. Now the flow of gas should be continued with the same pressure and in a short time the glove-finger will be found to be as hard as an icle. The string is then twisted and the finger pulled off the vent. If the snow is to be kept for a time it should be placed in a large test-tube or closed porcelain dish and set directly on the ice, in a refrigerator, where it will keep for some hours if care is exercised. It is best, however, to use the snow at once. To make the eyenon a sharp knife should be run around the glove-finger about 1 or 1 1/2 inch from the end, so that it sever the end of the leather finger but does not cut deeply into the snow (Figure 4). When the loose end of the finger is pulled off an ice mold protrudes. The remainder of the glove-finger becomes the holder of the eyenon while the snow is applied to the patient. The protruding end of the eyenon of snow can now be sharpened into a lead-pencil with a sharp knife, and can be thus applied to a very minute area. The size of the eyenon is readily regulated by tying a string anywhere along the length of the glove-finger.

The combining carbon dioxide snow is so simple that I am sure it will be a help to the busy man who wants to use a therapeutic agent of known value and is hampered by the expense or difficulty as to its easy production.

99 North Franklin Street.

REPORT OF A CASE OF SIMULATED, AND ONE OF A TRUE MAXILLARY EMPYEMA, BOTH OF DENTAL ORIGIN.

M. R. BRENN, M.D., Denver

Case 1.—History.—Mr. A. S., aged 38, a laborer, was first seen Nov. 27, 1911. Twelve years before all the teeth of the upper jaw had been extracted, and about one year before he had suffered from a condition similar to the one present at this time, although considerably less severe, from which he quickly recovered without treatment, except the use of home remedies. Three days previous he had suffered a dental extraction, and later he complained of a tender length of time. The right side of his face became swollen and painful in the evening. The next day the swelling had increased to such an extent that by night the eye could not be opened. When observed at the office the following day, the right side of his face was so swollen as to be almost level with his nose. The eye was nearly closed by a superficial edema of both lids. He complained of some pain, though not very severe.

Examination.—There was a hard swelling about the size of a walnut in the region of the canine fossa, with some heat and tenderness. The edema of the eyelids appeared to involve only the skin and not the deeper tissues. Nasal examination showed a normal mucous membrane and absence of pus. There was no swelling or congestion of the turbinates. The nasal septum was deflected to the left. An absolute shadow on the right side was observed on transillumination. The left side was clear. The mouth revealed a full set of teeth on a plate in the upper jaw. There was pus on the buccal surface of the plate and a glistening angle on the right side. On removal of the plate the gums showed no inflammation or swelling; they presented a healthy appearance except for two small fistulous openings, one in the inferior border in the region of the canine tooth, the other, about half an inch farther back on the buccal surface, was discharging pus. These fistulas communicated with each other. A probe passed into the former came in contact with a loose, hard substance which on being moved permitted the escape of pus. This hard substance proved to be the root apex of the canine tooth, measuring about 3/4 inch in length; its removal was followed by the discharge of about a dram of pus. There was no communication between this fistula and the antrum.

Recovery was prompt, and the swelling disappeared in the course of a few days.

Remarks: The interest in this case centers about the small case for the severe symptoms, and the ease with which the condition could have been mistaken for a coned maxillary empyema, especially since the previous attack might readily have been considered an acute empyema with spontaneous recovery.

At first it was reasonably certain that there was a coned suppuration of the antrum, the picture presented being almost typical of such a condition, particularly in view of the history of the extraction of the teeth twelve years before, which seemed to eliminate all probability of a dental origin for the extensive swelling.

On account of the great disparity between the amount of pain and the swelling, the superficial character of the edema of the eyelids, and the absence of the pathologic lesions in the nose usually present in disease of the antrum, the obvious course was to search for an extra-nasal source of the symptoms. When unearthy this as the offending object the insignificant portion of a tooth which had given no indication of trouble until the attack a year before, the feeling of the physician was not unlike that of the individual, who, on seeing a giraffe for the first time, exclaimed: "Owen, there ain't no such animal!"

Case 2.—History.—Mr. F. N. B., aged 31, salesman, had had most of the diseases of childhood, including scarlet fever and diphtheria. Otherwise, he had been in good health until 1902, while serving in the Philippines, when he had an attack of acute cholera. Since then he has had recurring attacks of dysentery. In 1907 the patient had a toothache of throbbing character in the first molar of the left upper jaw. The tooth was filled and gave no further trouble until a year later. At this time he had an alveolar abscess of the same tooth, which was relieved by rupture. Later, half of the tooth broke off and the filling came out. It remained in this condition until July, 1911, when on biting some hard substance the remaining portion crumbled away. A patient attempted to extract the roots next day, but was unable to do so, except in a number of pieces, a small piece being removed by the patient with a toothpick a week later. The left side of his face became swollen and painful immediately, and by the next day the swelling was very marked and the pain quite severe. The lower lid also swollen and hot and tender. The pain lasted about ten days and the swelling three weeks during which time there was deafness in the left ear. Following the deafness the patient experienced a roaring sound in his ear for a time and finally complete return to normal. About ten days after the swelling started he began to notice a very bad taste in his mouth and foul odor. These gradually increased in severity, the odor becoming noticeable to his family and friends. Some time in September the patient began to have considerable discharge from the left side of his nose, very much worse on rising in the morning, which he attributed to a cold and, therefore, disregarded. He had been examined on two occasions by the dentist, but no communication had been found between the tooth-sOCKET and antrum. The first evidence the patient had of such an opening was when blowing forcibly through the stem of his pipe air seemed to come through his nose by way of the tooth-sOCKET, this being confirmed on November 27 by the patient. After this time while using a mouth-wash with some pressure the fluid escaped through his nose. On account of the above condition and an increasing distress due to the odor and taste, the patient sought relief Dec. 1, 1911.

Examination.—The second bicuspid and first molar teeth of the left superior maxillae were absent. In the place of the latter there was an elliptical opening in the alveolar process about 3/4 inch long by 3-10 inch wide filled with tough granulations, which were bathed in pus. A probe passed into this opening led into the antrum and its withdrawal was followed by a quantity of foul-smelling pus. Pus also flowed freely on separating the granulations. No exposed bone could be discovered on careful probing.