and was quite sensitive and painful during the operation, but yielded readily by the application of an astringent wash, and in a few days was restored to its former tone of health.

The crowns of several of these teeth, some eight months previously, had been built up solid by the use of the mallet, with adhesive gold, but after a few months' use it was discovered that they were rapidly wearing away, caused by the grinding force and hard surface of the artificial teeth coming in contact with the pure gold. This suggested the operation of capping with hard metal as the most permanent manner of prolonging their use.

The above operations being new in the practice of dentistry, and having taken an interest in their performance, I take the liberty to give them the name of Compound Cap Restoration.—*Pacific Med. & Surg. Journal.*

ARTICLE X.

Fatal Case of Tetanus Resulting from the Removal of Ten Teeth from the Upper Jaw while under the Influence of Nitrous Oxide Gas.

By H. K. STEELE, M. D., Dayton, Ohio.

J. E. P., aged 19, of strong constitution, robust and in full health, on the 1st of March last, while under the influence of nitrous oxide gas, administered by a dentist, had ten of the upper teeth removed, for the purpose of having a full artificial set inserted.

He felt some of the pain of the operation, but was well able to endure it and recovered, apparently, from its effects, and continued at his occupation, that of farming. On the 7th of March a twitching of the lower lid of the right eye, with a tendency in it to "draw down," was observed by himself and friends. On the 8th he applied to the dentist for relief, who made an external application of chloroform, deeming that sufficient. The left eye, however, became similarly affected, and other symptoms were gradually manifested until the 14th, at which time I first saw him (the

distance from the city—7 miles—being, probably, a reason why I was not sooner called). There was then inability to separate the jaws more than three quarters of an inch, a spastic contraction of the masseter. There was retraction of the angles of the mouth, and an occasional clonic spasm of the muscles of the abdomen.

Under the influence of a cathartic, with full doses of belladonna and bromide of potassa, and ice-bags to the spine, two or three hour's sleep was obtained that night; without, however, relaxation of the jaws, or entire subsidence of the abdominal spasm. On the morning of the 15th there was a perceptible exaggeration of the symptoms, the spasms of the abdominal muscles at times being very painful, a drop of water falling on the chin or running down the neck, producing the spasms in their full force. Deglutition performed with some difficulty.

Chloroform, by inhalation, moderated the pains and gave temporary comfort. Atropia was substituted for the belladonna and cannabis indica for the potass. bromide, with morphine to be given at night.

March 16th.—Had slept two hours during the night after taking the morphine, but a continuance of it did not maintain relief. This morning the disease is aggravated. He cannot remain in bed, and occasionally has to be raised to the standing position—the spasms affecting all the muscles of the body, that of the extensors predominating.

From this time onward the disease increased in severity; the thoracic muscles, those controlling the respiration, being more affected than the others. There was at no time opisthotonos or emprosthotonos, but the body was powerfully extended to a straight position. He was not able to remain in bed during the last two days, and it was only whilst there was relaxation of the spasms that he could sit in a chair; *the rest of the time he was held on his feet, and required the doors and windows to be kept open*, which, in the very inclement weather, was an aggravation to his disease and precluded all hopes of affording him relief. He died on the

19th, almost in a standing position, having just sunk down exhausted by the violence of a spasm.

The treatment may be summed up as follows :—Ice-bags to spine ; morphine ; chloroform by inhalation ; cannabis indica ; bromide of potassium ; belladonna ; atropia ; extract of calabar bean by hypodermic injection, one third of a grain in solution, and one grain per ore. The remedies affording the most relief are in the order in which they are named.

Chloroform, for the last two days, affected the respiration dangerously. The hypodermic application of calabar bean was not in the least beneficial.

Dr. Jno. Davis, of Dayton, saw the case with me the last three days.—*Cincinnati Lancet and Observer*.

ARTICLE XI.

Removal of One-Half of the Inferior Maxillary for Osteo-Sarcoma.

By S. R. BECKWITH, M.D.

Mrs. B——, aged thirty-six, observed, some three years before I became acquainted with her case, a small tumor on the outer portion of the lower jaw, about mid-way between the symphysis and angle. It soon increased in size ; at times was painful. Her physician was consulted, and treated her for six months. During his treatment the growth was slowly yet steadily-increasing, until he advised removal as the only successful treatment. She would not consent, and did not again apply for treatment, preferring to let it grow uninterrupted, until it had filled the cavity of the mouth and very largely distended the cheek. For months she had not been able to take any solid food, from inability to masticate, and want of room for the introduction of food. Her nourishment was fluids taken through a tube. She had become excessively emaciated, and fearing that she soon would die, was induced to visit me. From the absence of any marked constitutional disturbance during its early growth, and its large size, the sensation of firmness being less than in exos-