piece about ½ inch by 1 inch and one triangular piece about 1 inch long and ½ inch wide at the base.

The edges of the wound were brought into apposition with 1 silk suture, a bipp pack was bandaged over the wound and the horse returned to her stall. The wound healed by primary union and the case was dismissed 4 days later.

—H. H. Rohwer, '43

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3 **A Case of Gynandromorphism in the Equine.** On Oct. 17, 1943, a five year old, black and white spotted horse entered the Stange Memorial Clinic. The owner had previously written the clinic concerning the patient, giving a history which suggested nymphomania. The patient was observed for several days, but no symptoms of true nymphomania were exhibited. Instead, the horse showed symptoms of sexual desire resembling a stallion. Rectal palpation revealed rudimentary development of the uterus and vagina, the anterior poles of the uterine cornuae being terminated in pendant, cord-like structures of such length that the ovaries could not be palpated. A tentative diagnosis of gynandromorphia was made. After consulting the owner, it was decided to submit the horse to surgery.

On Oct. 27, the patient was given 1½ oz. of chloral hydrate per orum as a basal anesthetic and restrained in a right lateral recumbent position on the operating table. An operative area extending 12 in. ventral to the transverse processes of the lumbar vertebrae, and extending from the posterior border of the ribs posteriorly for 10 in. was shaven. The area was cleaned with ether and painted with tincture of iodine. The surrounding hair was moistened with bichloride of mercury solution (1-1000). Inhalation of chloroform completed the anesthesia.

The surgeon's hands were prepared by thorough scrubbing with soap and water followed by immersion in 70 per cent isopropyl alcohol. A sterile shroud was placed over the operative area and secured with forceps. An incision was made through the abdominal wall in the paralumbar area, its dorsal aspect beginning 4 in. anterior to the tuber coxae on the same level and extending ventrally 8 in. The organ at the normal location of the left ovary was picked up and removed using the chain ecraseur to secure hemostasis. The organ on the right side was removed in a similar manner. Approximately 10 oz. of sulfanilamide were placed in the peritoneal cavity. The peritoneum was closed with a continuous suture of No. 4 plain catgut. The layers of muscle and fascia were brought into apposition in a like manner. The skin incision was closed with 10 interrupted silk sutures.

Photo showing the testicular tissue removed from the patient.

The patient was removed from the table to floor mats and in 30 minutes was stable enough to walk to its stall. Feed and water were withheld until the next day

On Oct. 28 the horse showed a keen appetite and bright disposition. Pulse, temperature, peristalsis, and respirations were normal. Three No. 10 capsules of sulfanilamide were given per orum and this treatment was continued for 7 days. On the fourth day the two ventral skin sutures were removed to allow drainage of a slight sero-sanguinous exudate which had collected beneath the skin. The wound was treated with a thin suspension of sulfanilamide in distilled water. On the seventh day the remaining skin sutures were removed. Throughout the post-operative period the condition of the patient appeared excellent. The only systemic

symptom noted was an icterus of the visible mucous membranes attributed to chloroform intoxication of the liver. The patient continued to an uneventful recovery from the surgery.

Microscopic section of the removed organs revealed about one-third of the tissue to be seminiferous tubules, the other two-thirds being made up of interlobular and intralobular connective tissue and interstitial cells. Cells of the tubules consisted of spermatogonia or spermatocytes. No spermatozoa could be seen. Rarely could mitosis be seen in the spermatogenic cells. The cells of Sertoli were scanty. No evidence of ovarian structure could be found in any of the tissues sectioned.

It can be logically concluded that the presence of testicular tissue accounts for the symptoms shown. It is not known whether removal of the tissue will effect a recovery.

—Philip C. Peterson, '43

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4 **Repulsion of Cheek Teeth.** The pleasure or luxury horse is rapidly coming into the picture. With the coming of this city-kept and fed horse by owners who know very little about feeding and caring for horses, troubles are inevitable. Disturbances of nutritional origin will make their appearance and, in fact, have already made their appearance.

Among these troubles may be listed alveolar periostitis. Not all cases of alveolar periostitis, however, are due to nutritional deficiencies, although it is probably the largest single contributing factor. Records at the Stange Memorial Clinic at Iowa State College show that there was a sharp rise in these cases following the drought years of 1934 and 1936. Reports from men acquainted with livestock problems of other parts of the country indicate that the condition may have a geographical relationship which also points to nutritional deficiency. Infection introduced to the roots of the teeth is also a common cause of alveolar periostitis. Other causative factors are split or cracked teeth, injuries to the gum, and fractures of the jaw bone. By far the most common direct cause is failure of one of the central canals of the teeth to close. This indirectly is probably due to a nutritional factor, an inheritance factor, or both.

Occurrence

Any cheek tooth may be infected, but for some reason, still unknown to science, the fourth upper tooth is by far the most commonly affected. Records kept by Dr. Bemis while at Iowa State College showing the incidence of the condition for each tooth are shown below.

1st cheek tooth	10 %
2nd cheek tooth	21 %
3rd cheek tooth	21 %
4th cheek tooth	34 %
5th cheek tooth	12 %
6th cheek tooth	1.5%

There are two forms of the disease, one being acute suppurative and the other chronic ossifying periostitis. Most cases occur in animals between the ages of 2½ and 8 years. The onset is probably gradual but the process is not apt to be noticed until the final stages when the symptoms alarm the owner. The disease process then increases rapidly and the symptoms become progressively more severe. Symptoms that may be noted are cautious mastication, carious odor, painful swelling of the mandible or maxilla in the region of the affected tooth, and a unilateral nasal discharge from the affected side. There may be a partial fracture of the tooth, recession of the gums, looseness or displacement of the tooth, and generally an empyema of the sinuses according to the location of the tooth. The fingers should be passed along the lateral surfaces of the teeth between the teeth and cheek to discover displacement of teeth or splitting and displacement of the lateral half only.

Young Horses Affected

Since the condition occurs most often in young horses while the teeth are still long, extraction is usually difficult to accomplish. Repulsion then must be resorted to. A discussion of the generally accepted procedure for repulsion follows.

Proper anesthesia, for which chloral hydrate combined with local anesthesia is

(Continued on page 108)