when teeth were extracted, as in this case. If it seemed advisable for the patient to wear the bandage during the day he should advise the use of the headgear described by Dr. de Vries. He did not quite agree with Prof. Chiavaro in his proposed method of treating open bite. Sauer used the same method with vulcanite plates between the molars about twenty-one years ago, and Schmidt (Luebeck), also seemed to have used it, but although he had never tried it, he did not see why it was necessary. It was claimed by Prof. Chiavaro that it gave a fulcrum, but the molars themselves were a fulcrum and no new fulcrum was required. It must also have a bad influence on the ligaments of the joint. If he understood Mr. Boelger rightly, he claimed that the permanent teeth caused the open bite. He himself thought the permanent teeth erupted normally but the mechanical stimuli to the growth of the lower jaw had not been sufficient in the earlier years and the lower jaw had not its normal shape. It was well known that the lower jaw, from the embryological stage, was growing more and more downward in the posterior region, but that growth was chiefly caused by mechanical stimuli, and if the stimuli were not there, there could not be a normal development of jaw. If the molars erupted in a jaw with a short ramus necessarily there must be an open bite; otherwise the points of the roots would come out through the lower border. With regard to Dr. Anema's mention of Dr. Case, Dr. Case claimed that the direct cause was mouth breathing, that the patient had to keep the mouth open and a bending resulted. That, however, he himself did not think was right, because if the action of the masticating muscles was normal then the bending would not occur. He thought, the cause was to be found in the weak masticating muscles and insufficient growth of the jaw in the region of the angle. With regard to heredity, most cases were not hereditary, but he was sure some of them were. Why should the *Mordex apertus* not as well be hereditary as the abnormal mandible by the Habsburgers? He himself also had a case which was absolutely congenital. The physician who had assisted with the delivery of the patient told him that the lower jaw at birth was abnormally shaped.

THE LIGATURE JACK.

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THE "ligature jack" is intended to take the place of the regular jack screws, having the advantage of giving a lighter pressure and a pressure that is continuous.

It consists of a bar with a hook sliding in a split tube (Fig. 1). Tied from the hook on the bar to the hook on the tube, is a ligature (silk or grass-line), the shrinkage of which forces or rather pulls the bar out of the split tube. The knot of the ligature should be tied in the hook on the tube, to avoid causing the bar to bind in the tube.

Fig. 2 shows one of the appliances which was used for unlocking an impacted lower third molar. Fig. 3 shows the change in the position of the molar. The end of the sliding bar engages a pit or groove drilled in the third molar. This should be made large enough to allow the tooth to tip without binding on the end of the bar. The shrinkage of the ligature exerts such a light and even pressure that the patient need not be conscious of it, nor the anchor teeth strained in the least. Ligatures need not be changed oftener than once in two weeks, and three or four months is sufficient time to entirely unlock impacted third molars.

Fig. 4 shows one of the appliances as used for the expansion of the deciduous arch. The position of the hooks and the length of the split tube

gives some idea of the amount of expansion which has occurred. By the early expansion of the canines and deciduous molars, with the "ligature jack", room is made for the incisors, with little annoyance to the patient and but few treatments from the orthodontist.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

In constructing the appliance, care must be taken to see that the bar does not bind in the tube and that the tube is so made that the bar can slide through and will not be displaced.