

## Reports of Cases

*Dr. Robert H. W. Strang reports the following case.*

The patient, aged 11 years, presented with the malocclusion illustrated in Figure 1.

*Case history:*—Rather frail child but nervous symptoms were not marked. Has had measles and diphtheria.

No history of supernumerary teeth in any relatives was obtainable. All family history was negative.

Healthy as little baby but had a bad fall at 4 months and cut mouth in region of upper incisors. Upper right deciduous incisor erupted at one month of age.

Sucked thumb for several months in infancy. Was bottle fed. Walked at seven months.

*Habits noted:*—Sucks lips during swallowing and exerts a strong pressure against anterior portion of denture during this process.

*Sleeping posture:*—Always slept on right side and rested her face on her hand.

Is a nasal breather. Adenoids and tonsils were removed at 2½ years of age.

The development and tonicity of the facial muscles are about normal. Has grown rather rapidly.

During treatment was operated upon for acute appendicitis but made a normal recovery.

Radiographic examination showed that the right maxillary central incisor was present but that there was a supernumerary tooth associated with it, located on the lingual side and possibly fused to the central. The root of the central incisor appeared as if deflected distally. Figure 2.

*Diagnosis:*—Malocclusion, complicated by a supernumerary incisor and an abnormal maxillary incisor, submerged.

### *Case Analysis.*

*Classification:*—Class I with closed bite and right maxillary buccal teeth forward to their normal relationship.

*Prognosis:*—Favorable for reducing the deformity and making space for the submerged incisor but questionable whether right maxillary incisor can be erupted or used after eruption.

It was deemed advisable to delay any surgical procedure for the removal of the supernumerary tooth until after the malocclusion had been corrected

and the space had been gained for the submerged incisor. By this method of treatment it was hoped that the tooth would erupt itself so that it could

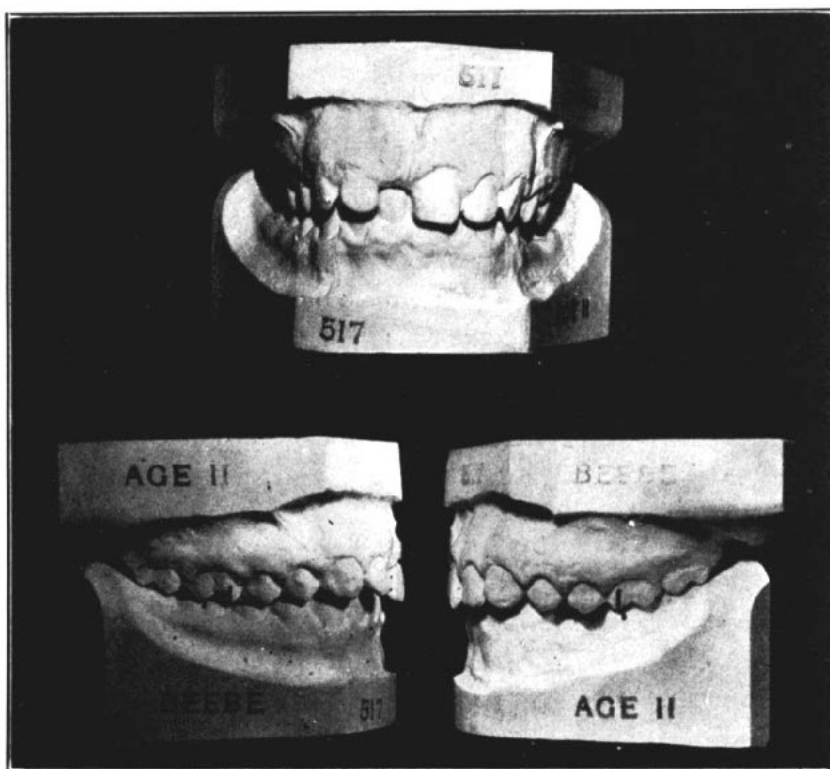


Figure 1

be readily removed if necessary, thus avoiding more complicated surgical intervention.

*Etiology:*—The fall in babyhood may have had some bearing on the condition in that it may have injured the tooth germ and started additional tooth formative processes.

The submerged tooth permitted the maxillary teeth on the right side to be carried forward and mesially under abnormal pressure, derived most reasonably from the sleeping posture.

The excessive overlapping of the maxillary and mandibular incisors is apparently due to hypermuscular activity arising in the sucking habit associated with swallowing. This has evolved an excessive curve of Spee in the mandibular denture thus placing the mandibular incisors in supraocclusion, while the molars are in perverted mesial axial inclination and the premolars

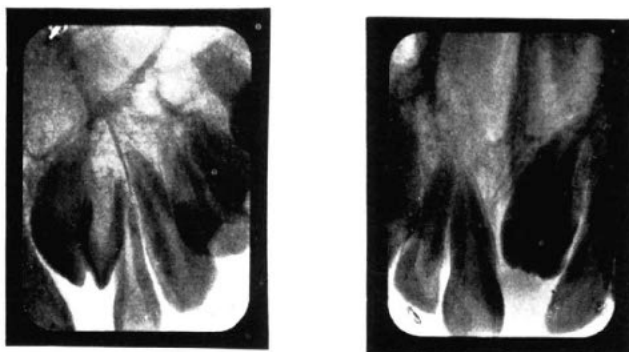


Figure 2

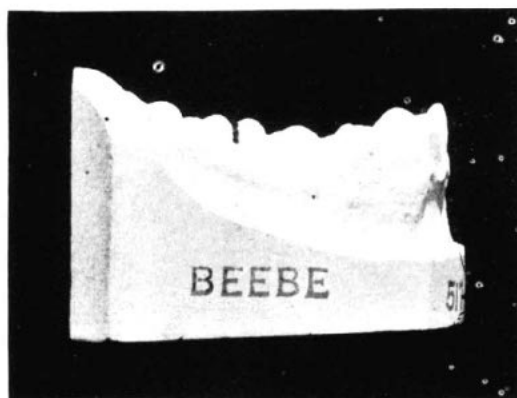


Figure 3

are in infra-occlusion. Figure 3. The photographs, Figures 4, show there is excellent vertical growth in the denture so the overbite cannot be due to infraocclusion of the molar teeth.

*Treatment indicated:*—(a) Maxillary denture: The molars, premolars, canines and right lateral moved distally.

Depression of left central and left lateral incisor.

Rotation of left central and both canines.

Correction of axial inclination of left central.

General arch development.

(b) Mandibular denture: Elevation and tipping distally of the molars. Carry left molar distally to release deciduous molar, then have this latter tooth removed as radiograms show premolar to be present.



Figure 4

Elevation of the premolars and depression of the incisors.

Tipping the incisors labially.

Rotation of both centrals, left lateral and right canine.

Correction of axial perversion of the right lateral incisor.

(c) Associated treatment and homework: Use passive swallowing exercises and jaw developing exercises.

Learn to sleep on the back.

Thorough mouth hygiene.

*Adjustment and manipulation of appliances:* The edgewise arch mechanism was used. The bracket bands were placed on all the incisors, canines and premolars. Clamp bands, with rectangular sheaths, were adjusted to the four first molar teeth. No band was placed on the left, second deciduous molar as it was planned to remove this as soon as the left molar had been carried sufficiently distally to furnish enough space through which to extract the deciduous molar. Radiograms gave evidence of the presence of the second premolar tooth.

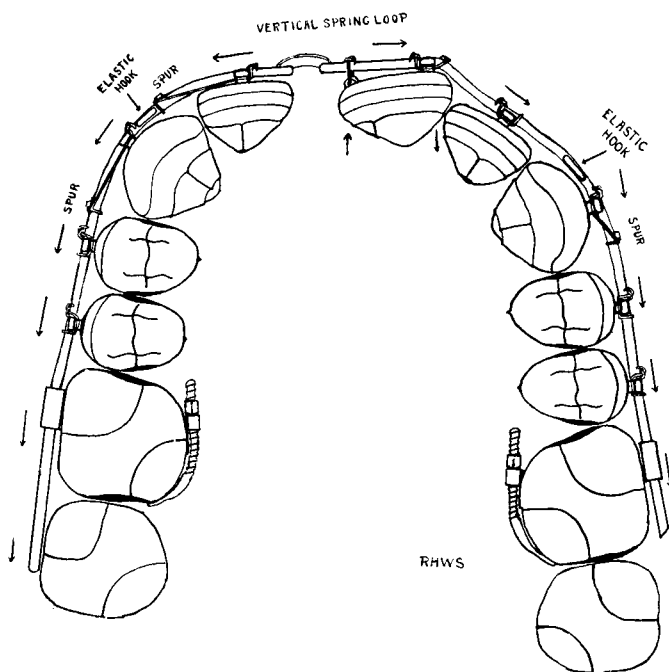


Figure 5

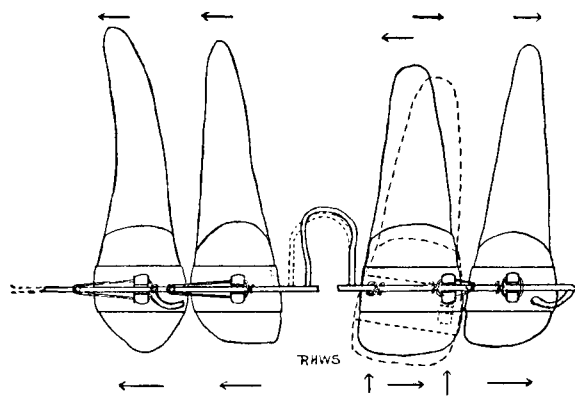


Figure 6

The ideal typal archwires were formed and adjusted to the mouth.

The first tooth movements were directed toward gaining bracket engagement of all the teeth by the use of ligature traction. When this had been

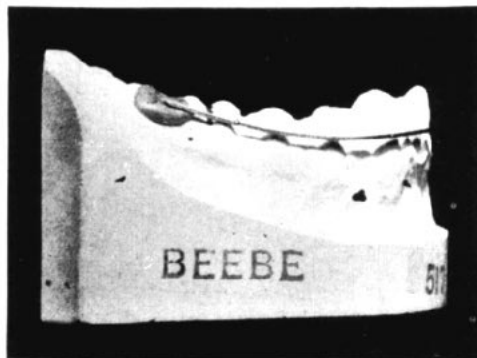


Figure 7

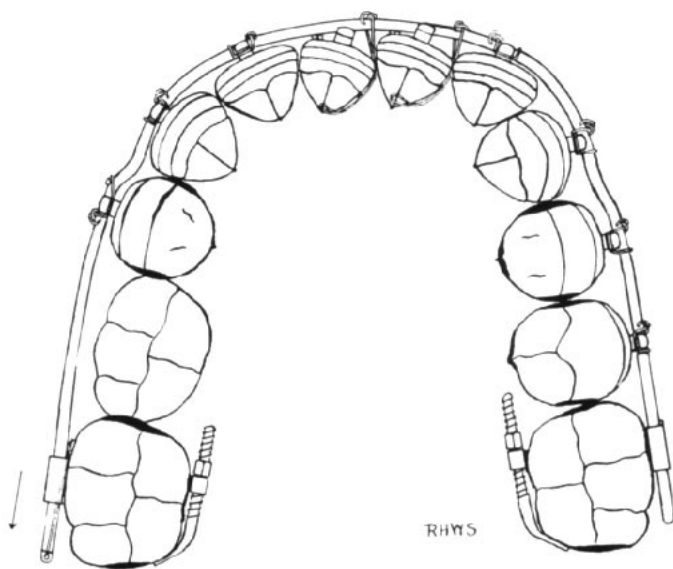


Figure 8

established in the maxillary arch, a vertical spring loop was inserted in the archwire at a point corresponding to the area where increased space was to be made for the right central. A traction ligature spur was placed on the archwire considerably distal to the right lateral bracket and another one equally distally to the right canine.

The vertical spring loop was set into activity by means of the canine ligature so as not to excessively strain the right lateral tooth. A second spur was placed close to but just distal to the bracket on the left central incisor to act as an anchorage spur.

A spur was also placed considerably distally to the left canine to be used as a traction spur to aid in the distal movement of the buccal sections of this side of the denture.



Figure 9

Intermaxillary elastic hooks were placed on the maxillary archwire just mesially to the canine brackets. The maxillary appliance is seen in Figures 5 and 6. In the distal movement of the buccal teeth no tip-back bends were used on either side of the archwire. The movement required on the left side was not sufficient to demand such an arch modification and plenty of force was obtained by traction on the left canine spur by the use of a ligature engaging the left canine bracket. This force was augmented by the intermaxillary elastic traction but the latter was not used until the right side was nearly completed lest the anchorage be insufficient.

On the right side, the marked distal movement needed was effected by the action of the vertical spring loop and the intermaxillary elastic force. It will be noted in the models of the case taken after treatment, Figure 12, that this distal movement on both sides has been a bodily one, for none of these buccal teeth show a perverted axial inclination such as would indicate that the crowns had been moved distally but that the roots were still mesially located.

When the mandibular archwire was first inserted, a marked curve of Spee was incorporated in its make-up. Figure 7. This was necessary in order to obtain bracket engagement with the banded teeth in this denture, which it will be noted, were exhibiting a marked curve of Spee. As soon as the brackets were seated on the archwire, the curve of Spee was gradually removed and eventually slightly reversed. This procedure automatically tipped the molars upright, elevated the premolar teeth and depressed the incisor teeth thus correcting the excessive overbite.



Figure 10

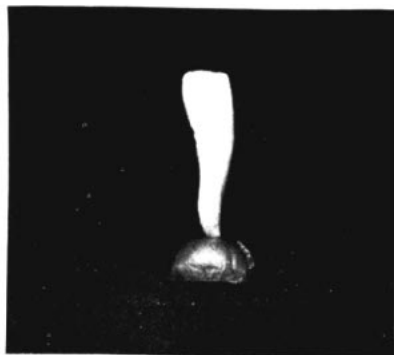


Figure 11

The intermaxillary elastics were not applied until full bracket engagement had been established in both dentures. The correction of the overbite by the above mentioned manipulation of the mandibular archwire effected a superstationary anchorage in the mandibular denture from which to use the intermaxillary elastic traction.

The left first molar was carried distally by passing a ligature through a staple that had been soldered to the extreme end of the archwire and carefully filed so that it would pass through the rectangular sheath. This ligature was carried around the mesial end of the rectangular sheath and tightened with the ligature locking pliers. The traction thus effected caused the archwire to spring slightly buccally, in the area between the rectangular sheath and the bracket on the first premolar, thus creating an anterior and posterior pushing force, which acted mostly against the molar, forcing it distally, because of the powerful anchorage anteriorly. This anchorage was reenforced by the use of a spur just mesially to the first premolar bracket over which the ligature that was adjusted to this bracket, was caught. Figure 8.

As space was evolved in the right maxillary central incisor area by repeated renewal of the action of the vertical spring loop through ligature traction at six weeks intervals, aided by the action of Class II intermaxillary



elastics, I was gratified to see, by radiographic evidence, that the right central and its associated supernumerary tooth were steadily erupting.

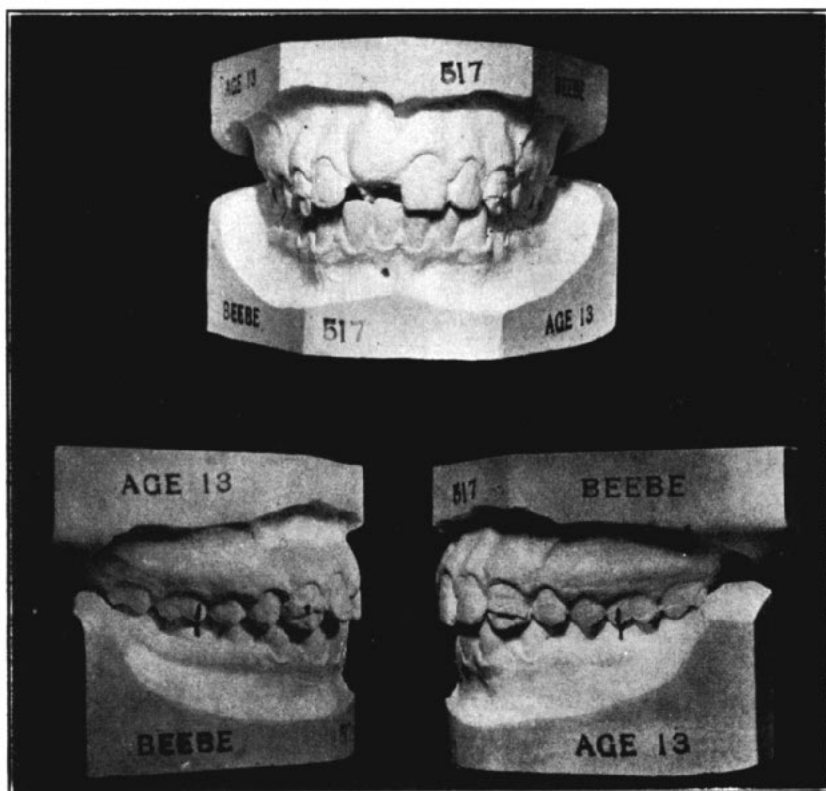


Figure 12

After abundant space had been gained and the correct adjustment of the teeth to one another and to skull anatomy had been obtained, together with the proper amount of overbite, retaining devices were adjusted. These consisted of a canine-to-canine, lingual wire retainer on the maxillary denture and a molar-to-molar, lingual wire retainer on the mandibular denture. The mandibular left central incisor was also banded and spurs adjusted on this band to prevent a recurrence of the corrected rotation.

Soon after this retention was adjusted the tip of the abnormal tooth appeared, lingually situated and turned at right angles to the central. Figures 9 and 10. In form it was like a lateral incisor. At first it seemed firmly attached to the central but in about five months time the eruption had pro-

gressed so far that it could be securely grasped and then it was seen to move independently of the central incisor. As soon as it had erupted sufficiently far to permit the adjustment of the beaks of extracting forceps the patient was sent to her dentist, Dr. Lawton, for its extraction which was skillfully



Figure 13

accomplished without harm to the central. Figure II show this supernumerary tooth and Figure 12 illustrates the models of the corrected case taken about three months after the retaining devices were adjusted. The supernumerary was extracted two months after these models were taken and the central incisor is now erupting, slightly rotated but apparently of normal crown form. Figure 13 shows photographs of the patient taken subsequent to active treatment.

The result of this palliative method of treating an uncertain complication of submerged tooth abnormality, with most satisfactory results, prompts the reporting of this case in such detail.

The models shown in Figure 1 were taken September 26, 1931 and those appearing in Figure 12 were obtained on September 18, 1933.