SHORT NOTES

A DOUBLE-FACED BOVINE CALF
(Diprosopus tetraophthalmus diotus distomus)

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A ten years old non-descript cow of a Lyallpur suburb gave birth to a double-faced female calf. She had been served naturally by a young Sahiwal bull. A 6th calver, no abnormal offspring was ever born to her before. The delivery required manual help. The new-born, said to have been in posterior presentation, gasped intermittently for a few minutes and then died. Afterbirths were retained. As a result the dam also died on the fourth post-partum day.

THE MONSTER

Total weight of the monster was 69 lbs. She was grey in colour but her foreheads, mane, mid-dorsal line and switch of the tail contained many dark brown hair. Except for a partial duplication of the head her body did not show any other malformation or abnormality (Fig. 1). The anal, as well as, vulvar openings were normal and so were all her internal organs.

The monster carried an enlarged head. It comprised of two conjoined faces attached behind to a common cranium. The two identical foreheads met each other in one somewhat reduced temporal fossa; obliterating the space for the two central ears. There were thus only two ears, one on either side of the exaggerated head.

Each rostrum consisted of (1) one fully developed mouth comprising of a normal muzzle, a lower lip, usual teeth, one palate and one tongue (2) a pair of normal eyes, and (3) a well developed nasal cavity showing two well developed nostrils. The two tongues, however, converged behind to meet at a common somewhat enlarged isthmus facium whose upper margin was formed by the two converging and confluent soft palates. This common pharynx opened behind into the usual larynx and the normal oesophagus.

The head was later skinned carefully and macerated in cold lye solution until all its soft structures were removed. This permitted a much better examination of its exaggerated bones of the skull.

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The only occipital bone was so modified that on it rested all the duplications. It articulated behind with a normal looking single atlas, and on either side with a normal temporal bone; each accommodating as usual a well formed ear (Fig. 2). The squamous part of the occipital bone was found fused with a curved roughly pentagonal plate in front, which formed the roof of a single but enlarged cranial cavity. This plate seemed to have formed by the fusion of the central parietals, as well as, interparietals. Either side of this U shaped bony plate furnished articulation to a pair of the normal yet duplicated frontal bones. Infront of the thus formed conjoined temporal fossa (Fig. 3) and in between the two central frontal bones were located the remaining too, much reduced, temporal bones. The latter lacking completely in their petrous parts, as well as, the usual mandibular articular surfaces. The central rami of the two somewhat mis-shaped mandibles, therefore, articulated with each other at what looked like an intermandibular junction (Fig. 3). The basilar part of the occipital bone seemed to bifurcate which articulated infront with the bodies of the two diverging sphenoid bones. The central temporal wings of the two sphenoid bones were wanting. However, their bodies articulated infront with one normal looking ethmoid bone each.

The bones of the face were all completely duplicated and showed no abnormality.

DISCUSSION

The precise cause of such deformities is not always known (Runnells, 1946). Union between the two rather similar components of its perfectly symmetrical head is suggestive of a one ovum origin (Craig 1930) of the monster. It appears that the process of twinning, somehow started in the head end of the body, was interrupted because of some unknown reasons. Whatever may have been the cause for the duplication or for the cessation of this process, from its symmetrical constitution the monster under discussion appears to be an incompletely developed monozygotic twin.

If this monster is considered to be a combination of two incomplete heads which got united at a common cranium, then in Gurlt's classification, (Craig 1930) it may be termed as a double monstrosity. As it has two diverging faces, each with a separate mouth, its full name may become *Diprosopus distans* variety *distomus*. Anterior twinning without leading to separation of the two heads would likewise make the monster under discussion a *Diprosopus* (Runnells, 1946; Roberts 1956). But its four eyes, two ears and two mouths would call for added designations of *tetraophthalmus diotus distomus*.

LITERATURE CITED

Craig, J.F. 1930. *Fleming's Veterinary Obstetrics.* 4th Ed., Billiere Tindall & Cox, London.

Roberts, S.J. 1956. *Veterinary Obstetrics and Genital Diseases.* Edwards Bros. Inc., Ann Arbor, Michigan, USA.

Runnells, R.A. 1946. Animal Pathology. 4th Ed., The Iowa State College Press, Ames, Iowa, USA.

COMPUTER PROGRAMME I (IBM 360/75 WATFOR) FOR AGE AND GROWTH STUDIES OF FISH

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This programme is completed in two steps. Programme A codes the data and Programme B prints the tables.

PROGRAMME A

The purpose of programme A is to pack information necessary for constructing tables in programme B. Required data on 4 fish is packed onto one card.

A. Input

1. Source deck.
2. Code card which has 60 distinct one column characters from 029 key punch.
3. Fish data cards.

B. Output

1. Programme codes only following information in first 42 columns: Years, gear, gear size, length, weight, age and serial number.
2. Converts inches into millimeters and pounds into grams.
3. Assigns a symbol to each length class and weight class.
4. Gear sizes are coded.

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