

het om so 'n verandering van die kursus te verwag nie.

Daar is op sy minste 'n sterk morele rede waarom almal wat ten tyde van die inwerkingtreding van die nuwe regulasies *bona fide* mediese studente is van die vereistes van die regulasies vrygestel behoort te word, afgesien van watter regte volgens wet daar ook al mag bestaan.

who had no reason to anticipate such changes in the curriculum.

At the very least there is a strong moral reason to absolve from the requirements of the regulations all those who are *bona fide* medical students at the time the new regulations are implemented, whatever the legal rights of the matter may be.

## MEDICO-LEGAL SECTION

### MEDICO-LEGAL ASPECTS OF THE WOLKERSDORFER CASE

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THE medico-legal examination of burnt fragmentary human remains may present considerable difficulty. The type of investigation which can be undertaken in these circumstances may be illustrated by our findings in the case of *Rex versus G. D.* (N.P.D., Durban Circuit Local Division, 22 November 1946).

#### HISTORY

On the morning of 24 April 1946 a burnt-out 'left-wheel drive' Hansa motor-car was found at an isolated spot on the Westville-New Germany road near Durban (Fig. 1). The remains of a severely

had not returned. It was presumed that the remains were probably those of Wolkersdorfer, but the body was so badly charred that it could not be identified by the ordinary means of investigation. The clothing was destroyed completely, but a charred gold coin which Wolkersdorfer was known to have worn on a chain as a 'lucky charm' was found among the debris in the car. A preliminary examination of the remains showed that the skull had been fractured, and this finding tended to support a police suspicion of foul play.

Wolkersdorfer, a 45 years' old German national, was interned as an enemy alien early in 1940, and was released in February 1946. He returned to Durban and lived with his reputed wife. During the afternoon of 23 April he received several telephone calls at his home and he asked for dinner to be served earlier than usual, as he had an appointment. He left his house at about 7 p.m., and, with the exception of a visit to a garage, nothing further was known about his movements.

On the road, about 100 yards from where the car was burnt, there were signs of a struggle, and at this point the police found portions of a broken brandy bottle. Human blood stains were detected on one of the portions of the bottle, and similar stains were found in the sand at the side of the road. These findings raised the possibility that the deceased had been attacked by vagrants, and a widespread search of the whole Westville-New Germany area was undertaken.

Towards the end of May the medico-legal investigations were completed and the police were informed that it would be possible to establish that the remains were probably those of Wolkersdorfer. A few weeks later the police asked whether the remains could be handed over to Wolkersdorfer's



Fig. 1. Burnt-out Hansa motor car found on the Westville-New Germany road, near Durban.

burnt body were found in the front of the car. On investigation it was learnt that the car was owned by an ex-internee named Michael Wolkersdorfer, who had left his home on the previous evening and

reputed wife for cremation, and consent was given after certain bones had been retained.

On the day of the cremation a burial notice appeared in the local newspapers. The Press had taken a lively interest in the case and the burial notice was the first positive indication to the general public that the body found in the car was that of Wolkersdorfer. Within a few days the police received information which led to the arrest of the accused.

The accused stated that he had stayed at home on the night in question and he denied all knowledge of the death. When he was examined, several large scars, which could have resulted from burns, were found on his back and right forearm. Ten days after his arrest he asked to be taken before a magistrate. In a sworn statement he said that he had met 'Mrs. Wolkersdorfer' in 1943, and they had become good friends. He met Wolkersdorfer after his release from the internment camp, and his friendship with the family continued. On several occasions he helped Wolkersdorfer to repair his car. At about 7.30 p.m. on 23 April he received a telephone call from Wolkersdorfer, who asked him to come out to the Westville-New Germany road to help him as his car had broken down. On arrival the accused did not try to start the car, but, after looking at the distributor, he decided to take the bowl off the carburettor. At Wolkersdorfer's suggestion he filled the bowl with petrol from a spare can which Wolkersdorfer produced. As he was fitting the bowl back on to the carburettor, his clothes suddenly caught alight. He tried to loosen the clothing, but eventually he had to run into the veld and roll in the grass to put out the flames. He returned to the car half-an-hour later, and Wolkersdorfer suddenly attacked him. In the struggle which followed, Wolkersdorfer struck him with a brandy bottle. As he considered that his life was in danger, he hit Wolkersdorfer on the head with a heavy spanner. In this way he subdued him and then helped him back into the car. He climbed into the driver's seat and drove off with the intention of obtaining medical assistance. As they went down a hill, Wolkersdorfer suddenly grabbed the steering-wheel and the car came to a standstill at the side of the road. A short struggle ensued, and he then noticed that the back seat of the car was ablaze. He tried to pull Wolkersdorfer out of the car, but was unable to do so, and ultimately he had to strike him in order to free himself. The whole car then went up in flames.

At the trial, the Crown alleged that the accused attacked Wolkersdorfer and struck him on the head. It was not possible to prove that the deceased died immediately, but it was contended that, if he did survive the injury, he would probably have lost consciousness. The Crown's case was that the accused then placed the deceased on the front seat of the car and pushed the car down the hill shown in the photograph (Fig. 1). When the car ran into the side of the road, the accused decided to burn the car. It was suggested that he poured petrol into the interior of the car, and, whilst setting it alight, his own clothing caught fire. In support of its case

the Crown sought to prove that the accused was in love with Wolkersdorfer's reputed wife, and that he had told a friend that he would get rid of Wolkersdorfer.

The accused was tried on a charge of murder before a judge and jury. He was found not guilty and discharged.

#### THE AUTOPSY FINDINGS

The condition in which the body was found is shown in Fig. 2. The remains of the upper part of



Fig. 2. Close-up of a view of the motor car showing charred remains of body.

the trunk rested on the collapsed driver's seat, and the lower part of the trunk was found on the floor of the car in front of the driver's seat. Both thighs were burnt off above the knees, and remains of both legs and feet were found in front of the passenger's seat. The facial part of the skull and practically the whole of the vault of the skull were burnt away (Figs. 3 and 4). There was extensive charring through the substance of the left arm above the elbow-joint, and the right arm was burnt off a few inches below the shoulder-joint.

When the remains were lifted from the car it was found that many parts of the body had been charred to ashy fragments. Some of the tissues crumbled and broke away during removal, but a considerable portion of the remains of the head and the trunk were removed in an anatomically identifiable condition. A detailed examination of the head showed a large depressed fracture involving the right side of the occipital bone (Figs. 5 and 6). The forward depression of the fracture into the cranial cavity resulted in a clear break in the continuity of the ridges and groove of the transverse sulcus, and there was an accumulation of charred blood on the inner surface of the skull in this region.

An examination of the remains of the neck and the trunk showed that practically all the tissues of the front of the neck and the upper part of the front of

the chest were burnt away. The larynx, the trachea and the oesophagus could not be identified. The whole of the right side of the chest was burnt away. The heart could not be identified, but a part of the left lung was present. With the exception of a portion of the liver and the spleen, all the abdominal and pelvic viscera were burnt away.

#### THE IDENTIFICATION OF THE REMAINS

The material available for this purpose consisted of the remains of the skull (Figs. 3, 4 and 5); the

upper five-sixths of the left humerus (Fig. 7); a little more than half of the left femur (Fig. 8); the upper half of the right femur (Fig. 9); the ischial parts of the pelvis and the remains of five cervical vertebrae.

*Determination of Age.* The fusion of the upper epiphysis of the humerus with its shaft and the presence of bony union between the basilar part of the occipital bone and the body of the sphenoid suggested that the deceased was fully adult. This was corroborated by the presence in the upper ends of the femora of a considerable degree of arthritic

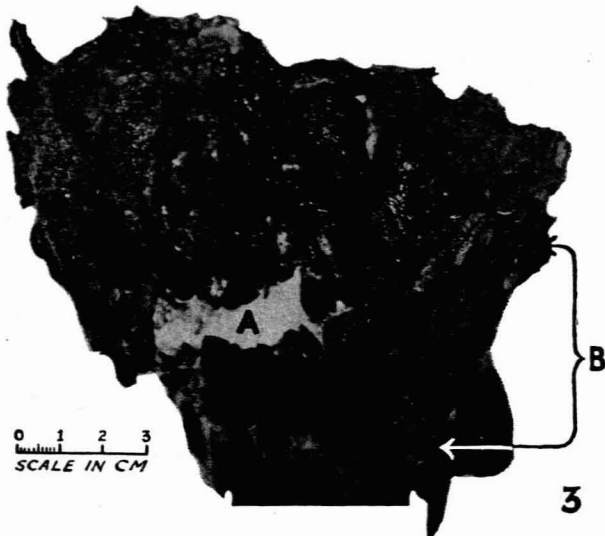


Fig. 3. Anterior view of the burnt skull. Note the white calcined condition of the alveolus (A) of the maxilla. 'B' is the left ramus of the mandible.

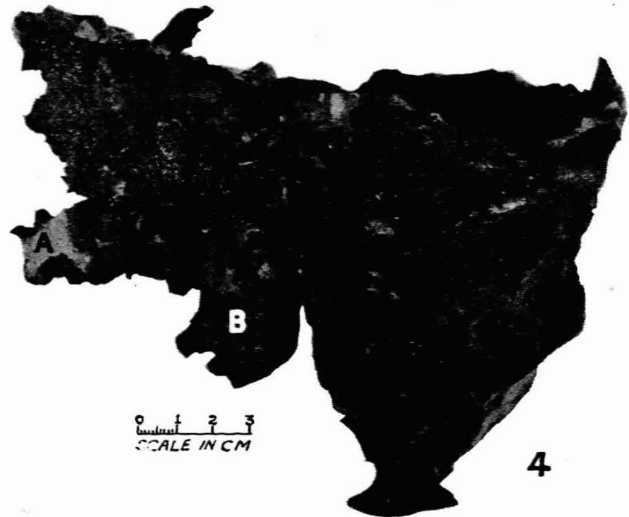


Fig. 4. Lateral view of the burnt skull. A: calcined alveolus. B: left ramus of mandible.

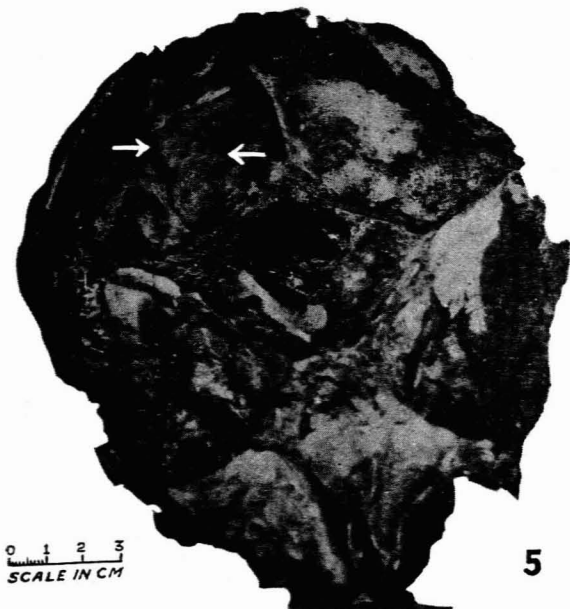


Fig. 5. View of the interior of the base of the skull, showing the large depressed fracture of the occipital bone.

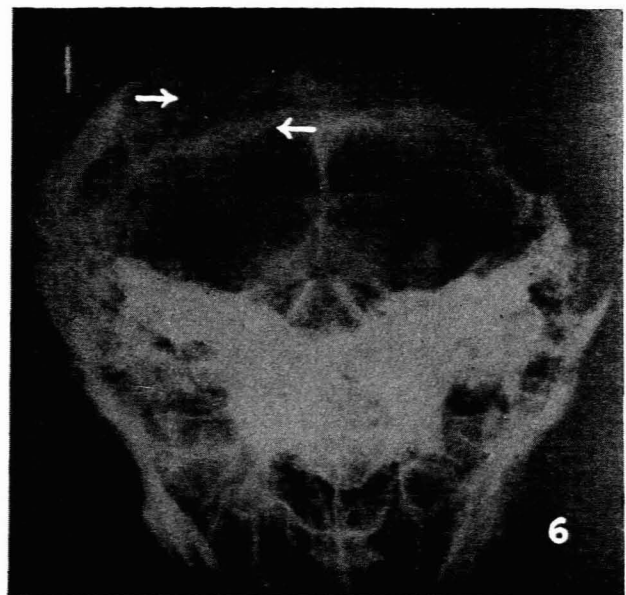


Fig. 6. X-ray of the skull, showing the fracture of the occipital bone.

change with lipping of the head of the femur as seen in Fig. 9. The destruction of the cranial vault precluded any closer determination of age.

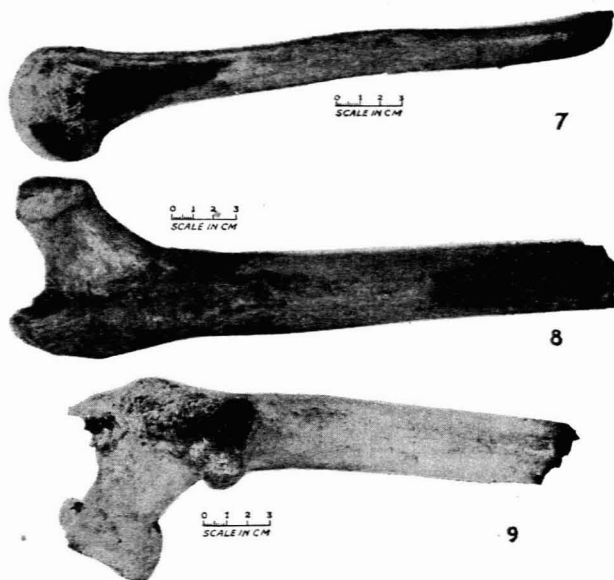


Fig. 7. Burnt left humerus.  
Fig. 8. Burnt left femur.  
Fig. 9. Burnt right femur.

*Determination of Sex.* The appearance of the ischial parts of the pelvis and the robustness of the upper ends and the size of the heads of each femur suggested that the remains were those of a male.

plete stage had first to be made. In making this calculation, advantage was taken of the fact that the muscular markings and the nutrient foramina are situated at fairly proportionate distances from the extremities of the long bones. The manner in which the left humerus (Fig. 7) and the left femur (Fig. 8) were reconstructed on this basis is shown in Figs. 10 and 11.

From the reconstructed humerus the stature was calculated at 5 feet 11½ inches (using Manouvrier's Tables) and as 5 feet 9½ inches (using Pearson's formulae). From the reconstructed femur the stature was calculated as 5 feet 10 inches (using Manouvrier's Tables) and as 5 feet 9½ inches (using Pearson's formulae). The femur is usually the most reliable single bone from which to determine stature, and the average of all the calculations was 5 feet 10 inches. In his passport, Wolkersdorfer's height was recorded as 5 feet 10 inches.

*Determination of Race.* Measurements of the skull showed that it was decidedly brachycephalic, i.e., it was very wide in relation to its length. This type of skull is practically never encountered in the Bantu and Bush races, and in the marked degree present in this case is uncommon among Europeans and coloured persons in South Africa. It is a special characteristic of the Alpine type of European and is very common in the part of Germany where Wolkersdorfer was born.

*Personal Identity.* In the case of Rex versus Ruxton, Glaister and Brash (1937) introduced a technique for the comparison of photographs of two skulls, which were recovered, with life-sized enlarge-

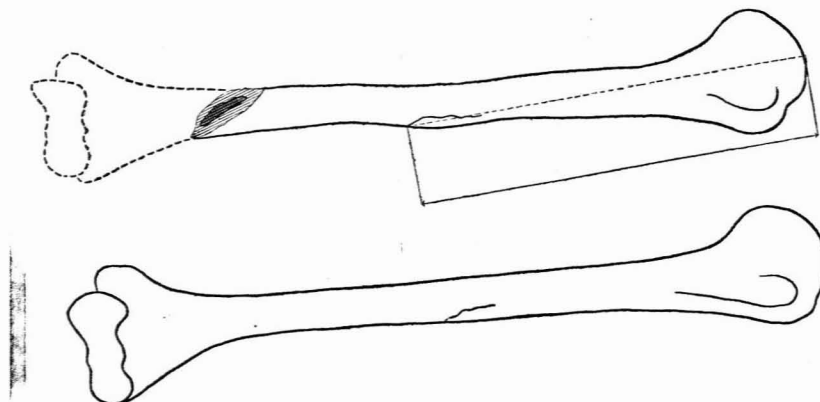


Fig. 10. Reconstructed drawing of left humerus (upper figure) compared with contour of a complete humerus (lower figure). The length of the reconstructed humerus was calculated from the fact that the distance between the head and the lower limit of the deltoid impression usually amounts to about 52% of the total length of this bone.

*Determination of Stature.* Stature may be determined by the use of certain tables and formulae if at least one complete long bone is available for examination. In this case all the long bones were burnt at their distal ends, and an initial calculation of the probable length of these bones in their com-

ments of photographs of two missing women. A modification of this method was employed in the present case.

Three photographs of the deceased were obtained (Figs. 12, 13 and 14). In order to make a comparison between the skull and the life size of Wolkersdorfer's



head, the police were asked to try and obtain the clothing worn by Wolkersdorfer at the time that the snapshot shown in Fig. 12 was taken. The shirt, the tie and the jacket were secured. As the tie had a

the mandible was somewhat displaced by the burning away of the chin and the muscles attached to it.

In Fig. 16, the head shown in the snapshot (Fig. 13) was enlarged so that the left ear was brought

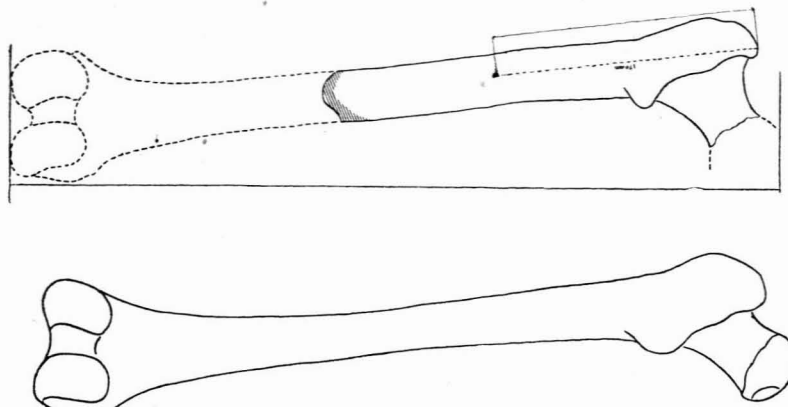


Fig. 11. Reconstructed drawing of left femur (upper figure) compared with contour of a complete femur (lower figure). The length of the reconstructed femur was calculated from the fact that the length from the top of the greater trochanter to the nutrient foramen, although variable, usually amounts to about 34% of the total length of this bone.

definite linear pattern, it was used as a scale to project the snapshot to the natural size of the tie, and therefore to the life size of Wolkersdorfer's head. The manner in which the comparison was then made is shown in Fig. 15. An outline of Wolkersdorfer's head was drawn to approximately its life size. A machine-made projection drawing of the skull, orientated in approximately the same position as the head in the snapshot, was superimposed on the life-sized drawing of the head. This super-imposition showed good anatomical correspondence, although

to its life size by taking a measurement of the ear shown in Fig. 15. A machine-made projection drawing of the available part of the face was then superimposed on the outline of the head and, apart from the displaced mandible, a fair anatomical correspondence was obtained. The circles in the drawing indicate the position of shot pellets which were placed in each auditory meatus. These were wide apart in the skull, and the fact that they could fit into the transverse dimension of the head was significant. In Fig. 17 the head was enlarged in the same way as in



Fig. 12. Snapshot of deceased Michael Wolkersdorfer taken in Durban, 1946.

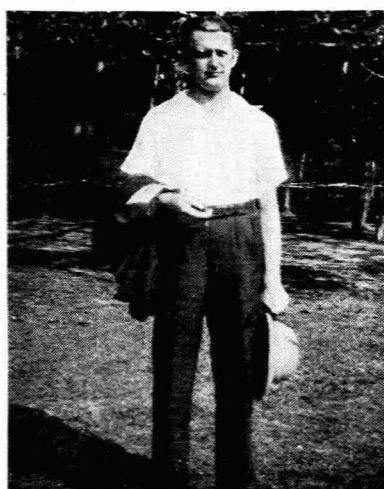


Fig. 13. Snapshot of deceased Michael Wolkersdorfer taken in Germany, 1937.



Fig. 14. Snapshot of deceased Michael Wolkersdorfer taken in Germany, 1937.

Fig. 16. The snapshot (Fig. 14) from which the drawing was made was slightly out of focus and therefore not as reliable as the other drawings, but a correspondence in the characteristic shape of the head is shown.

Caliper measurements of the skull and the reconstructed head were made, and a consistent agreement between the skull and the head proportions was found.

According to Moritz (1946), two types of thermal fractures of the skull are seen. In one, the fracture results from a rapid increase in intracranial pressure and the fragments are displaced outwards. In the other type, the fracture appears to be due to a rapid desiccation of the bone with contraction and takes a linear form involving the outer table of the skull. In this type there is no displacement and the lines of fracture are frequently stellate. According to



Fig. 15. Drawing of the skull superimposed on a drawing of the head made from the photograph shown in Fig. 12, in the manner explained in the text.



Fig. 16. Drawing of the skull superimposed on a drawing of the head made from the photograph shown in Fig. 13, in the manner explained in the text.

#### THE CAUSE OF DEATH

In view of the condition of the remains it was not possible to determine the cause of death with certainty, but it was important to decide whether the skull fracture was caused before the fire started. Fractures of the skull can result from an exposure of the head to intense heat, but this fracture was unlike a thermal fracture.

Moritz there is likely to be secondary mechanical disturbance of bone in both types of fracture. This is usually due to falling debris or rough handling of the body and, if the bone is brittle enough, depressed fractures can result.

In this case there was no evidence of debris having fallen on the body, and the head was supported carefully during the removal of the remains. More-

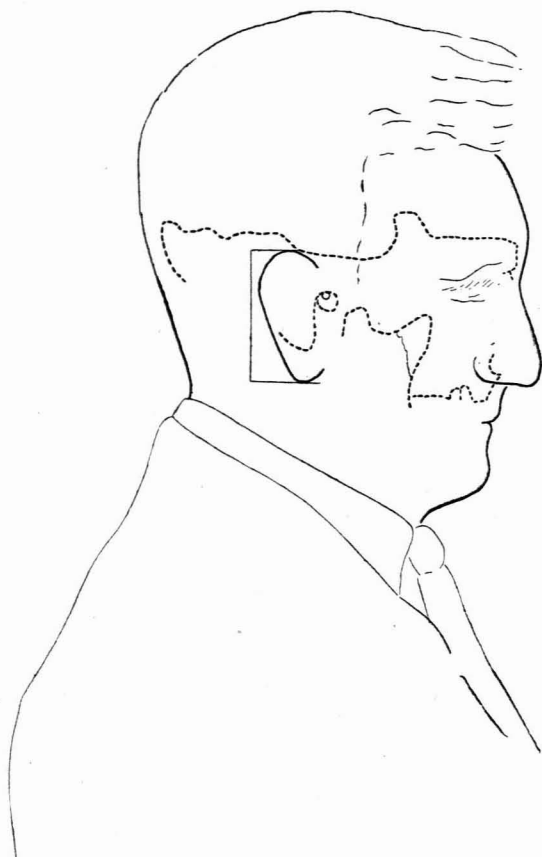


Fig. 17. Drawing of the skull superimposed on a drawing of the head made from the photograph shown in Fig. 14, in the manner explained in the text.

over, the depressed fracture was found in a portion of the skull which was not burnt as intensely as the rest of the skull. Examination showed that the related parts of the occipital bone were not brittle. For these reasons the view was taken that the fracture was probably produced before the fire started.

In the absence of any other finding it was considered that the fracture, in association with intracranial haemorrhage, could have caused the death of the deceased.

#### SUMMARY

An account is given of a medico-legal examination of the charred remains of a body found in a burnt-out motor car. The age, sex, stature and race were determined by the use of principles ordinarily applied in anthropological investigations. The personal identity of the deceased was established to a considerable degree of probability by a technique of comparing life-sized machine-made projection drawings of the skull with drawings of life-sized enlargements of snapshots of the deceased. In determining the cause of death reference is made to the features distinguishing thermal fractures from traumatic fractures of the skull.

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## PSYCHONEUROSIS IN THE SOLDIER\*

### ITS PSYCHOPATHOLOGY AND AETIOLOGY

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(Continued from page 519)

#### II. DEVELOPMENT OF THE NEUROSIS

The emotional stresses, however engendered, which the soldiers experienced, produced at one end of the scale minor maladjustments, temporary or enduring, to the social and work situations in which the soldiers found themselves, in line with the temperament and character traits of the individuals affected, and at the other end, serious

behaviour and character disturbances and the various psychoneuroses and psychoses.

The soldier's capacity of resistance to emotional stress may be judged, to a greater or less extent, by his morale and the strength of his group identification. They are inextricably interwoven and support and promote each other. They are the first defences of the ego to meet the onslaught of adverse emotional experiences, and their measure

\*The section on psychopathology formed the subject of a lecture delivered at Tara Hospital.