suspensions in normal saline, using a normal saline control; marked localized urticarial reactions occurred with both the quinine and the mepacrine, while the control showed no reaction. As a result of these tests he was considered unfit for service in malarious areas.

Such a condition must be very rare indeed, and I can find no reference to this double hypersensitivity in any textbook available to me at present. In fact, in *Memorandum on Medical Diseases in Tropical and Subtropical Areas* there occurs this statement: "Those with an idiosyncrasy to quinine can take mepacrine with impunity. Mepacrine appears to provoke no similar condition."

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A Source of Error in the Determination of Cell Counts

The flatness of the cover-slips used for counting-chambers is usually taken for granted. It is perhaps not as widely known as it might be that slips which are not flat are occasionally met with. As all such slips are ground flat, one can only assume that they warp after manufacture as the result of internal stresses. Inaccurate cell counts result.

A degree of deformity too small to be perceptible by inspecting the cover-slip edge-on may cause gross inaccuracy. Thus a slip which is only 10μ "off the flat" at the highest point of the convexity will cause an inaccuracy of 10% if the correct depth of the counting chamber is 0.1 mm. A curved cover-slip, used sometimes with the convexity upwards, sometimes downwards, will cause puzzling fluctuations in the cell count of the same patient.

Once a cover-slip has been found to be defective it may be thought advisable to determine the degree of inaccuracy with a view to adjusting counts that have previously been made with it. This is possible only when one can be sure that the curve has been upwards or downwards in all estimations, when the amount by which the curve is off the flat, expressed as a percentage of the correct chamber depth, can be deducted from

Distortion of the image of a spherical bulb caused by a deformity of 10μ off the flat.

or added to the counts, as the case may be. If, as has probably been the case, the convexity was sometimes upwards and sometimes downwards, measurement of the degree of deformity will at least show whether it is so great as to place previous counts beyond the permissible limits of inaccuracy.

RECOGNITION OF DEFORMITY

Any such deformity may be easily and quickly perceived and measured by the following method:

1. Hold a corner of the cover-slip lightly between the tips of thumb and forefinger.
2. Stand with the back towards a lighted lamp, and about 1 metre from it.
3. Hold the slip at arm's length, and at such an angle that the reflection of the light bulb can be seen in it. If the slip is deformed the image will be distorted. Such deformation is usually cylindrical, resulting in an image which is elongated or compressed in one axis so that a circular light-bulb appears oval.
4. Hold the slip with the concavity facing the eye as shown by an elongation of the long axis of the oval reflection.
5. Note by what proportion approximately the long diameter exceeds the short. Then, assuming that the distance between eye and slip is 30 in., it may be shown, by reasoning beyond the scope of this paper, that if the excess is 28% the slip is 10μ off the flat (see Fig. 2), if $12\frac{1}{2}\%$ it is 5μ , and if 6% it is $2\frac{1}{2}\mu$. In practice an approximate estimate of this excess is sufficient.

The whole process is a matter of a few moments, and large numbers of slips can be examined in a short time.

The presence and extent of such deformity can, of course, be determined with the aid of a microscope with a calibrated fine adjustment. A few small drops of a solution of a coloured substance—e.g., ink—are allowed to dry on the surface of the slip, which is then placed, coloured surface downwards, in position on the counting-chamber. The dried ink is first focused, then the ruled squares, the fine adjustment being read on each occasion and the true depth of the chamber noted. The correct depth subtracted from this will give the figure required.

The first method described has the advantage of simplicity and speed, and does not entail the use of a microscope with a calibrated fine adjustment.

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Salivary-gland Tumour of the Upper Lip

The following record of a case of some rarity may be found of interest.

CASE REPORT

A girl aged 18 came under my care in the Royal Infirmary, Edinburgh, in March, 1940, on account of a painless swelling of the upper lip which had been present for many years but had become larger and rather disfiguring recently. It was centred strictly in the midline and protruded on the buccal surface, covered by normal mucous membrane. Using a local analgesic, a transverse incision was made through the mucous membrane, and a solid round tumour, one inch in diameter, was enucleated very easily and completely. The wound was sutured and healed without difficulty, a perfect cosmetic result being obtained.

Histological examination demonstrated the characteristic appearance of a mixed tumour of the parotid (see Fig.). There were hyperchromatic epithelial cells, arranged in the form of alveoli and in solid masses, and a stroma showing the appearance of the so-called cartilage. There was no evidence of malignancy.

COMMENT

The mixed tumour of the salivary glands occurs most frequently in the parotid and less so in the submandibular and sublingual glands, but it also arises in uncommon sites such as palate, tongue, pharynx, larynx, neck, face, orbit, scalp, auditory canal, lacrimal gland, and lips. Sir James Paget in 1851, according to Cade (1937), was the first to describe a

A photomicrograph of the specimen.

parotid tumour in the lip, and of the cases noted since then in the upper and lower lips four were recorded by Wood (1904), one by Schreiner and Mattick (1929), one by Patey (1930), two by Ahlbom (quoted by Cade), and four by Robbins (1943). An aberration in the development of the salivary-gland tissue may possibly account for some of the unusual positions. Ahlbom (1935), however, believed that the tumours in all sites should be classified as mucous-gland and salivary-gland tumours, in which case a tumour of the lip can be explained as arising from a mucous gland and not from an aberrant portion of parotid tissue. In his opinion, also, such tumours are quite benign at the age of the patient here reported.

I wish to thank Dr. R. F. Ogilvie for the histological examination and Mr. D. Smith for the photomicrograph. I am indebted to Mr. John Harkness, who saw the patient with me and actually suggested the correct diagnosis.

Edinburgh.

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The *Annals of Science*, the quarterly review of the history of science since the Renaissance, which has been in abeyance since December, 1942, has resumed publication with the issue of July 15.