A Colour Atlas of

ORAL PATHOLOGY

K.W. Lee

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Oral Pathology

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To Ivor R. H. Kramer OBE
who first unravelled for me
the mysteries of oral pathology

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Introduction

It used to be said 'As is your pathology, so is your practice'. Yet with the advancement of knowledge on all fronts in dentistry, it becomes increasingly difficult for the dental student to acquire an insight of the cellular basis of disease with the limited time at his disposal. This Atlas has been planned, therefore, to aid the student to acquire an understanding of oral pathology, to see how histopathology can be related to a clinical problem that the budding dental surgeon has to handle. The inclusion of some clinical and radiographic material has been deliberate, to remind the student that histopathology is but one of the parts of the elephant, and that he or she must attempt at all times to see the elephant as a whole.

While the Atlas caters mainly for undergraduate students, I hope that postgraduates preparing for one of the fellowship diplomas of the Royal Colleges will find it of assistance to them in the oral pathological segments of the examinations; trainee oral pathologists also should derive some benefit from it. Many of the clinical conditions referred to can be found in the Atlases that form part of the series of books produced by the publisher, and the student is urged to correlate the information in these companion volumes with the information provided here, which is necessarily brief.

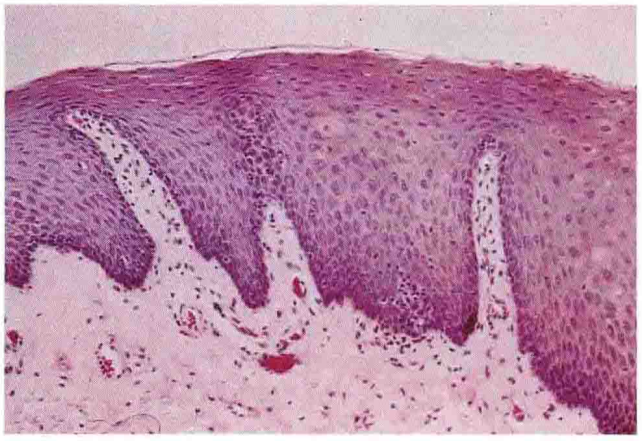
Magnifications have not been stated, as I believe that they are of little value, particularly when built-in landmarks such as blood cells are included. Unless otherwise stated, all sections are haematoxylin and eosin stained.

1 Lesions of the oral mucosa

(i) Cells and normal structures

1 Non-keratinized stratified squamous epithelium (cheek). This type of epithelium covers a large part of the lining mucosa of the mouth, principally the cheeks, lips, floor of mouth and soft palate. It consists of a basal layer, a prickle-cell layer which forms the greater part of the thickness of the epithelium, and a few layers of flattened surface cells. Beneath the epithelium is the connective tissue of the lamina propria.

1



2 Keratinized stratified squamous epithelium (hard palate). This covers the hard palate, gingiva and the dorsal surface of the tongue. A thin layer of pink-stained keratin is seen on the surface.

2

3 Keratinized stratified squamous epithelium (tongue). This covers the dorsal surface of the tongue but here the appearance is further modified by the presence of the lingual papillae.

3

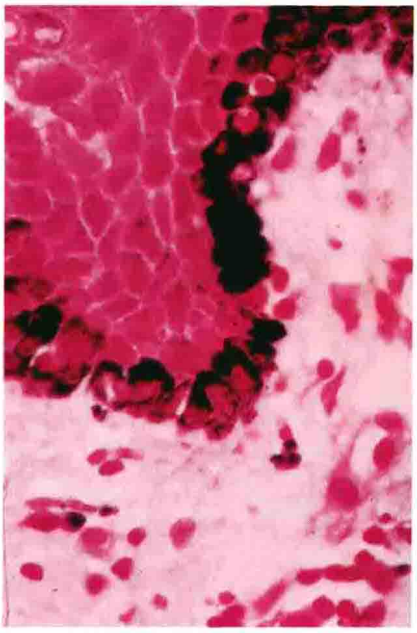
4 Taste bud within the covering epithelium of the tongue. The epithelium is parakeratinized, and a taste bud is present in the central area.

4

5 Pseudostratified ciliated columnar epithelium. This is the epithelium that lines the maxillary antrum and other parts of the respiratory tract. It is seen occasionally lining cysts of the oral tissues.

5

6

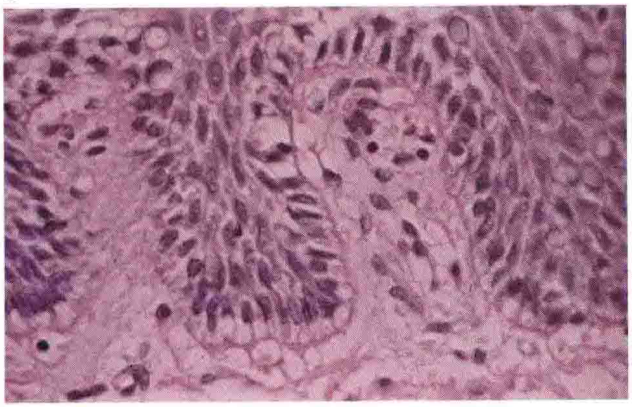


6 Heavily pigmented gingival epithelium. The basal cells of the epithelium are heavily pigmented with melanin. This patient is dark-skinned and the pigment is in both the melanocytes and the keratinocytes. *(Masson–Fontana)*

7

7 Dendritic melanocyte. It is not often that dendritic melanocytes can be made out in the basal cell region of the epithelium. They usually appear as clear cells. Here a dendritic melanocyte and its processes can be seen.

8



8 Basement membrane. The 'basement membrane' in light microscopy cannot be visualised in the vast majority of haematoxylin-eosin stained paraffin sections. Here a special stain, periodic acid Schiff method, has been used and the 'basement membrane' is seen as a magenta-coloured line.

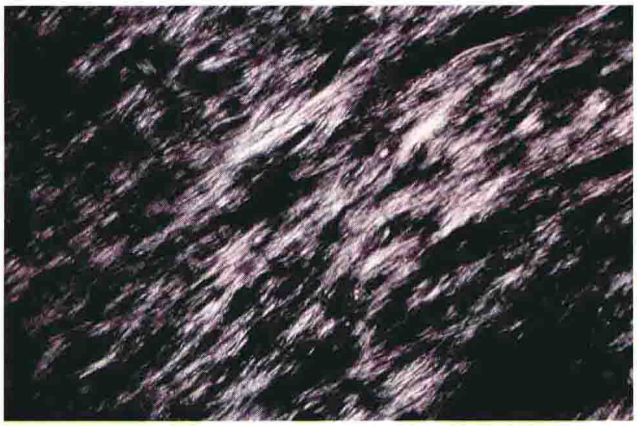
9

9 Basement membrane. Using a silver impregnation technique, the 'basement membrane' is visualised as a black-stained line between the epithelium and the connective tissue. *(Robb–Smith)*

10

10 Collagen fibres. These stain red with the van Gieson's picro-fuchsin technique and form the principal extra-cellular element in the corium.

11



11 Collagen fibres (polarised light). Under polarised light, collagen fibres are visualised as bright white fibres in a black background. They exhibit the property of birefringence or 'double refraction'.