BETEL-CHEWING AND CANCER.

BY

R. L. SPITTEL, F.R.C.S.,

SURGEON, GENERAL HOSPITAL, COLOMBO.

DR. LEITCH'S courteous and liberal-minded reply (BRITISH MEDICAL JOURNAL, October 13th, 1923) to my letter on this subject has induced me to send him a specimen of what I take to be a good example of betel-chewer's cancer—a carcinomatous ulcer of the cheek, beginning in that part of the buccal mucosa lying against the almost black molars and bicuspids, encrusted with rough deposits of tartar and lime. The absence of gloss and the leucoplakia of the mucous membrane outside the craggy edge of the ulcer give a fair idea of what the early or even precancerous stage is like in this form of cancer; for the growth has occurred in the centre of a chronically irritated patch. I look forward to Dr. Leitch's opinion of the specimen I have sent him. (See below.)

Regarding the rough deposits on the teeth of betel-chewers, Mr. C. T. Symons, to whom I sent specimens, reports that they consist of: organic matter; and the carbonates, phosphates, tartrates, and a trace of chlorides, of calcium and sodium. How much of this deposit is due to tartar and how much to chunam, it is difficult to say. Chunam consists of calcium hydroxide. The 1 per cent. of solids in saliva consists (besides protein, mucin, and ptyalin) of "inorganic salts of which calcium salts form a considerable proportion and are apt to be deposited as tartar on the teeth" (Bainbridge and Menzies). The deposit on the darkly pigmented teeth of betel-chewers differs from the tartar encrusting the teeth of ordinary individuals, in being more abundant, more patchy, and more generalized over the tooth surface, especially that against which the quid most often lies. I do not think there can be much doubt that, even if chunam is not deposited as such on the teeth, it, by providing an excess of calcium to the acid radicles of the saliva (carbonates, phosphates, and tartrates), aggravates the tendency to the deposit of salts.

Dr. Leitch very kindly invites my opinion as to the age incidence of buccal cancer, its frequency, latent period, and course.

The age incidence is interesting. Buccal cancer is met with most frequently between the ages of 35 and 50, with a tendency towards an earlier age than is usual with most forms of carcinoma. Of women, particularly Tamil women, is this more especially true. I have on many occasions seen it in them between the ages of 25 and 30. The explanation may lie in the probable fact that (a) betel-chewing is begun at an earlier age among Tamils than Sinhalese; (b) Tamil women are the more inveterate chewers, seldom being without a quid in their mouths. The relatively early incidence of betel-chewers' cancer in both races is perhaps due to the habit begun in early childhood. Carcinoma of the tongue, so rare among the women of Europe, is by no means uncommon among the women here. The earliest age at which I have seen cancer was a case of epithelioma of the penis in a youth aged 19.

Frequency.—Dr. G. Thornton has kindly drawn my attention to the Registrar-General's mortality statistics for cancer in Ceylon in 1921. Although little reliance should be placed on these figures (those for cancer of the breast and uterus, for instance, being obviously incorrect) they are interesting from the relative point of view: buccal cancer 163, cancer of the digestive system 137, cancer of uterus 20, cancer of breast 13, cancer of other organs 97.

Latent Period.—It is very difficult even to generalize on this. Precancerous leucoplakia often merges into definite carcinomatous change within a few months of its appearance; on the other hand leucoplakia may exist for years

as such; and in some cases leucoplakic fields may present several discrete foci of low grade malignancy (clinical and microscopic) without developing frank characters. One remarkable instance of this is shown in the photograph. The entire buccal mucosa was leucoplakic, the tongue glossy, and the oral orifice contracted; the lips were scored with hard-edged fissures, warty in places; the mouth was intolerant of any food that smarted in the least. The whole appearance was suggestive of a baking of the mucous membrane with lime. And yet this man could not be induced to forgo his betel-chew any more than many another with even foul fungating carcinomata ulcerating through the cheek! The glands were not markedly involved, but operation was out of the question. I watched this case for years. It is not uncommon for an individual to go to bed with a quid in his mouth and to continue his chew on awakening the next morning!

Course.—The case just mentioned is exceptional. Buccal cancer is, as a rule, very fatal. It invariably recurs, even after wide removal of growth and glands *en bloc*. But the patients here submit to operation much too late. To continue the comparison with cancer of the penis: the latter, if taken reasonably early, is comparatively benign, and may be expected not to recur provided the inguinal glands, which should not be appreciably enlarged at the time of operation, are removed with the penis, especially the glands about the saphenous opening, which, as a rule, are early involved and are placed at the gateway to deeper and less accessible metastasis.

The *betel-chew* is composed of betel leaf, sliced areca nut, crude tobacco leaf, a touch of chunam (slaked lime), and sometimes a small fragment of a resin called *kaipoo* (catechu?). The Veddas or wild aborigines chew various barks together with lime obtained by burning snail shells (*wantako*).

As for Dr. J. Campbell's contention that we should not be satisfied merely with attributing cancer to irritation, but should look further afield to some source of infection, probably in the soil, I am not competent to offer an opinion. All I maintain is that betel-chewing, for one thing, does seem to determine

the frequency of buccal carcinoma.

In conclusion I am sorry I have not more definite evidence to offer at present; but hope to be able to do more in the near future now that we keep detailed cancer statistics at the General Hospital. If the large hospitals in India would provide their figures, this problem of the bearing of betel-chewing on cancer of the mouth would no doubt be solved satisfactorily.

We have received the following note from Dr. Archibald Leitch:

Mr. Spittel has kindly sent me a specimen of buccal cancer removed from a betel-chewer. The tumour projects from the inside of the cheek as a hemispherical mass which is not markedly ulcerated. A section from the angle of the mouth right through the cheek reveals the fact that the cancer has spread through and replaced the tissues almost up to the external skin. Histologically it is a typical epithelioma, with a considerable amount of keratinization, growing in areas densely filled with round cells, amongst which are several multinucleated masses. The mucous membrane beyond the tumour proper shows the usual picture of leucoplakia and the papillary processes are much exaggerated and also undermined by extension from the more developed malignant lesion.

A PERIODICAL devoted to methods of production and the scientific study of milk has been founded. Its title is *Milchwirtschaftliche Forschungen*; it will be edited by Professor Grimmer of Königsberg, and will be issued six times a year by the firm of Julius Springer in Berlin. The annual volume will contain 640 pages. The price of each number is stated to be "6.— Mark, 1.40 Dollar."