

I have no doubt (1) this man contracted syphilis as the result of the tattooing; (2) that it was through the saliva of the operator. But, that the saliva *per se*, and not as the vehicle for some other discharge, has the power of conveying the virus from a syphilitic patient, the evidence is not quite conclusive.

HOW SHOOTING ACCIDENTS ARE TO BE AVOIDED.

DR. JOHN RUXTON, late Leicestershire Regiment, recommends, as means to prevent shooting accidents:

1. Impose a tax on all firearms except sanctioned by Government, and on all who use or borrow them, besides their owner, levying a heavy fine in case of non-compliance.
2. Make the very act of pointing a firearm at, or in the direction of, any person, a criminal offence.
3. In cover-shooting, the head of a party ought to call both shooters and beaters together, and obtain their sanction to the rule "that anyone using a gun who is seen interfering with trigger or hammer while the gun is pointing in the direction of any person, either when walking in line or crossing a fence, should be at once disarmed, and become a beater for the rest of the day." The discipline of keeping in line must be very strict; the gunners who walk with beaters should halt 120 yards from end of beat; beaters advance, leaving all winged game going forward to guns placed in front, and all going backward to those behind, neither firing till bird has risen well; ground game to be shot only when it has passed either set of shooters. After beat is completed, the forward guns and beaters may again drive back to other guns, observing similar rules of shooting. Excitement will thus be minimised, and a good average of game bagged.
4. In grouse driving the butts must be sufficiently low in front to allow free scope for shooting game coming towards one, and sides so high that shooter cannot fire into butt at either right or left, even if wishful to do so. To accomplish this, the floor of the butt must be excavated, and trenches dug at the lowest parts to allow escape of water. The back of the butt must be open to give full swing at game which is passing low, or has passed. The keepers and beaters to whistle loudly when within 150 yards of butts, after which no forward shots may be fired. The shooter on no account to leave his butt till beaters have passed him.

THE PARASITIC ORIGIN OF MALIGNANT GROWTHS.

DR. HARRY CAMPBELL, M.D., B.S.(Lond.) writes: The following is an abstract of a paper which was prepared some time ago independently of any published writings on the parasitic theory. As much has been recently written on this subject, it is unnecessary to give more than an abstract of my paper. I shall dwell chiefly on such points as have hitherto received little or no attention.

Malignant tissue is of inferior value to that of the surrounding parts; the change is retrogressive; it is not, as in development, a change from the homogeneous to the heterogeneous, but the reverse. Herbert Spencer, indeed, especially singles out the malignant growths as exceptions to his great principle of evolution, assuming that the change is from the homogeneous to the heterogeneous. A careful study of their structure and mode of growth would seem to show that this is not so. The tissue of sarcoma is of a very elementary order, but the carcinomata have no such simple structure, but there can be little doubt that, in their case also, the change is a backward one. In the squamous epitheliomata the epithelial cells dip down as in the development of all open glands, but the down-growing cylinders never become hollowed out. The glandular tissue is therefore of a very crude immature form. In the cylindrical-celled variety a more perfect variety of tissue is approached, for the cylinders contain a distinct lumen; nevertheless, the process is disorderly and the gland tissue, taken as a whole, is decidedly imperfect. In the acinous form of cancer the glandular type is maintained, but it is of an erratic kind. Wherefore we may say that the carcinomata consist of an immature and disorderly form of gland tissue. But the malignant change is not of the nature of a simple degeneration, for along with the deterioration in structure there is an actual increase in tissue activity.

In considering the etiology of malignant growths, it is very necessary to decide how far the malignant tissue is due to a simple transformation of the affected tissue, and how far it results from a multiplication of the few cells initially constituting the tumour. Although primary carcinoma is largely a transformation, yet it is certain that many of the cells are derived by a multiplication of the cells already constituting the tumour. Elements are everywhere present to share in the formation of the growth; for when it spreads to tissues in which there are no epithelia, the growth is evidently solely by a multiplication of the cells already belonging to the tumour.

My view of the matter is this: Under the bacterial irritation the tissues are unable to keep at their normal level, and revert to a tissue of a lower order, thus exhibiting some one or other of their many potentialities. The type of morbid tissue thus produced depends (1) upon the nature of the tissue primarily affected, (2) upon the nature of the parasite. We have seen that the secondary growths are not always due to the transformation of the affected tissues, wherefore the theory of reversion cannot apply to such cases. Such secondary growths depend, I believe, upon the transference of tissue cells *plus* the bacteria from the seat of the primary affection. Under the specific parasitic stimulus these transported cells take on the same morbid action as at the primary seat of infection by virtue of their potentialities. It is impossible, however, to deny that cells of the tissue secondarily affected take some share in the process. There are probably several varieties of "malignant" bacteria; the carcinoma parasite must be quite different from that causing sarcoma.

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