series. Their frequency suggests the average vertical extent of these cells in series to be five cells.

The cells in question are not to be confused with the long and narrow vessel elements of some woods nor with those vessel members which bear flap-like prolongations extending far beyond the perforation plate. Except for their perforations these cells differ not at all from the typical imperforate fiber-tracheids all about them. Since the xylem is well supplied with huge vessels it is improbable that these short series of perforated cells whose lumens are only as wide as the walls are thick would aid water transport materially.

Subsequent examination has shown similar cells to exist in all other species in our collections of the genus *Passiflora*, as follows: *P. menispermifolia* H.B.K., *P. seemanni* Griseb., *P. biflora* Lam., *P. misera* H.B.K., *P. punctata* H.B.K., *P. auriculata* H.B.K. and *P. coriacea* Juss.

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A POSSIBLE RELATION OF VITAMIN E TO UNRESTRICTED CELL DIVISION

As a result of a long series of experiments which have been carried out by the writer in collaboration with Drs. Card and Sloan, of the department of poultry husbandry of the University of Illinois, a large mass of evidence has been obtained which goes to show that vitamin E is very intimately associated with, and probably exerts an indirect controlling influence over, the nucleus of the cell during cell division.

In earlier experiments on the effects of vitamin E deficiency on the developing chick embryo, using a modification of the Waddell-Steenbock method of destruction of this vitamin by treating food with ferric chloride, remarkable conditions of tissue proliferation were encountered. It was also found that somewhat similar effects could be established in older birds under these conditions.

With this clue as a basis for further work, prolonged feeding of the treated food to chicks has resulted in the development of characteristic pathological lesions affecting the visceral organs. Histologically, these are found to represent foci of degeneration and destruction of normal tissues accompanied by replacement and invasion by new cell growths, which, in turn, appear to be derived from an undifferentiated type of tissue having the form of a delicate reticular syncytium. The whole series of effects are apparently due to a phenomenon of uncontrolled and unrestricted cell growth simulating malignancy.

A complete account of the results of this work and a possible theoretical explanation of the relation of vitamin E to unrestricted tissue growth, which will serve as a working hypothesis, will be presented in a separate article in the near future.

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SEPT. 19, 1934

THE CHEMICAL TRANSMISSION OF NERVE IMPULSES

MY address at Indianapolis on "Chemical Ideas in Medicine and Biology" (SCIENCE, Vol. 80, p. 343) was published so promptly that I had no opportunity of correcting a rather serious error in my statement dealing with recent work on the chemical transmission of nerve impulses. I stated (p. 347) that the weight of acetylcholine required to transmit the effect of a single nerve impulse to a single ganglion cell was of the order of 10^{-21} gram; and, as Mr. Watson Davis reports under "Science News" in the same number, I verbally emphasized this estimate before a great and distinguished audience by stating that it represented about 3 molecules of the substance. Dr. Langmuir had, in fact, had the kindly interest to make this last calculation for me just before the meeting. Not till my arrival in London did I make the humiliating discovery that the distractions of a brilliant occasion had led me into the promulgation of a gross numerical error. An important factor of 10^6 had slipped out of the calculation. The figure should have been 10^{-15} in place of 10^{-21}, and from this correct value the calculated number of molecules would have been three million, not three. The incorrect statement, as I made it, may cause some theoretical pangs to physiologists who read it, and I wish to relieve their bewilderment as promptly as possible.

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SCIENTIFIC BOOKS

PARASITISM AND DISEASE

Parasitism and Disease. By THEOBALD SMITH. 196 pp. Princeton: Princeton University Press. $2.00.

FORMER students of Theobald Smith and medical men in general will welcome his book on "Parasitism and Disease." This work, based on his Vanuxen lectures, but expanded and with additional chapters, is presented as his "final attempt at showing the relation between disease and parasitism in its broadest manifestations." Read critically, some of the material