not metastasized. The proliferating epithelium shows many division figures but no inclusion bodies suggestive of virus infection. The histology is that of an epidermoid carcinoma. The behavior of the papilloma, when protected from injury or bacterial infection, as after transplantation to the interior of the body, is that of a typical neoplasm; but in the circumstances of its natural occurrence, as reported by Shope, it differs significantly from the latter. It is endemic amongst wild rabbits and is frequently multiple; it is referable to a causative agent which can be readily separated from the proliferating tissue; and a single injury of the epithelium is sufficient to enable this agent to act. The occurrence of the growth evidently is conditioned by but few factors, whereas that of the generality of mammalian tumors would appear to be dependent upon many, or upon very special ones. The supposition that the latter are due to an extraneous cause would entail the assumption that this cause is well-nigh ubiquitous but is so greatly conditioned in its action by various factors that its presence can not readily be demonstrated by either the experimental or the statistical method.

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The present status of the values of e, h, and e/m: RAYMOND T. BIRGE. A precision value of the electronic charge *e* may be determined in two different ways. The specific charge *e/m* may be determined in several different ways. But the Planck constant *h* can be determined only in connection with *e* or *e/m*. There are, in addition, a number of types of experiment that yield a f(e, h, e/m). In every case these three constants occur only as factors, so that each function may be written as $(e)^a \cdot (h)^b \cdot (e/m)^c$, in which the exponents a, b, c are integers, positive or negative or zero. One such f(e, h, e/m) is Bohr's formula for the Rydberg constant, for which the experimental value is known to one part in 10^6. This formula is still believed to be correct, and by its use e/m may be eliminated from any other f(e, h, e/m), thus giving a series of f(e, h). Each of these functions can be written in the form $e = a \cdot h^m$, in which *a* is an experimentally determined magnitude, and *m* is found to vary in value from zero to unity. Developing a general idea first suggested by W. N. Bond, we write $e_m \equiv a \cdot h_o^m$, in which h_o is an assumed value of h, and e_m a resulting apparent value of e. This may be transformed, by a Taylor's expansion, to $e_m = e - (e_o \cdot \triangle h/h_o) \cdot m$, in which e_o is an assumed value of e. The plot of e_m against m is thus linear. The intercept gives the true value of e, and from the slope one obtains the true $h = h_o + \triangle h$ (see R. T. Birge, *Phys. Rev.*, 40: 228, 1932). There are at least 14 distinctly different types of experiment, with 9 different corresponding values of m, each of which is capable of giving an accurately determined point on the e_m diagram. Any *two* such points, at different values of m, correspond to a definite value of e and of h. The Rydberg constant formula then gives e/m. If all the experimental data were consistent, the 14 points would lie on some one straight line. Hence the e_m diagram shows at a glance the relative consistency, or lack of consistency, of the experimental data. It is also possible to plot on this diagram, at various values of m, auxiliary scales giving the values of quantities such as the Bohr magneton, the fine-structure constant, etc., directly measured by the several experiments. The e_m diagram is thus transformed into a nomographic chart, from which may be read not only the values of e, h and e/m corresponding to any assumed linear graph, but also the values of these other quantities, such as the Bohr magneton, required in order to make all the data consistent. The chief object of the present paper is to illustrate the remarkable "bird's-eye-view" that this diagram gives of a situation of great intrinsic complexity. In 1929 the writer pointed out an outstanding discrepancy in the various experimental values of e/m. As a result of numerous investigations since then, the discrepancy has disappeared, and three very different methods now yield 1.757×10^7 *em* units. There has, however, now arisen an equally outstanding discrepancy between the wave-lengths (λ_g) of x-rays, measured directly with a grating, and the values (λ_s) deduced from Bragg crystal reflection, assuming a geometrically perfect crystal of calcite, and assuming some value of e ($= e_s$). The Siegbahn system of λ_s corresponds to an assumed $e_s = 4.7740 \times 10^{-10}$ *es* units. The λ_g values require approximately $e_g = 4.805$. The best direct measurement of e (by Millikan) gives 4.768. The author has made extensive recalculations of recent experiments, such as those on refraction of x-rays, diffraction of electrons, etc., introducing the latest theoretical developments, as well as improved auxiliary constants, and each result is shown as a point on an e_m diagram. Two of these points, as well as Eddington's theoretical $1/\alpha = 137$, are fairly consistent with $e_g = 4.805$. One point (σ) requires a value of e much *lower* than 4.768. Two methods (Compton shift and fine structure of hydrogen) do not now give precision results. The remaining points are all fairly consistent with $e = 4.768 \times 10^{-10}$ *es* units and $h = 6.547 \times 10^{-27}$ erg. sec, giving $e/m = 1.7574 \times 10^7$ *em* units, $1/\alpha = 137.41$. Certain alternative assumptions regarding x-ray wave-lengths shift the position of 5 points on the diagram, without, however, improving the consistency, and as long as the uncertainty regarding these wave-lengths remains, the values of e, h, etc., just given can not be said to be at all certain.

(To be concluded)

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