number of centuries since it was founded, times the difference between its rate of accumulation and the rate of surrounding aggradation. If, as has been with many excepting those of type I, it was away from aggradation, its height would be simply lG.

Most of the oases that interest us have long since been abandoned and erosion enters the equation; then $h = lG - [E(t-l) + At]$, or total thickness of culture, minus erosion since abandonment and amount the plain has arisen around it. But obviously the plain will in time rise to bury the eroding top. Let t_b = time at which erosion will meet aggradation (time of total burial), then $h = 0$ and $lG = E(t_b - l) + At_b$ and $t_b = \frac{l(G+E)}{(A+E)}$ and the first equation $h = lG - [E(t-l) + At]$ is true only when t is less than $l\frac{G+E}{A+E}$.

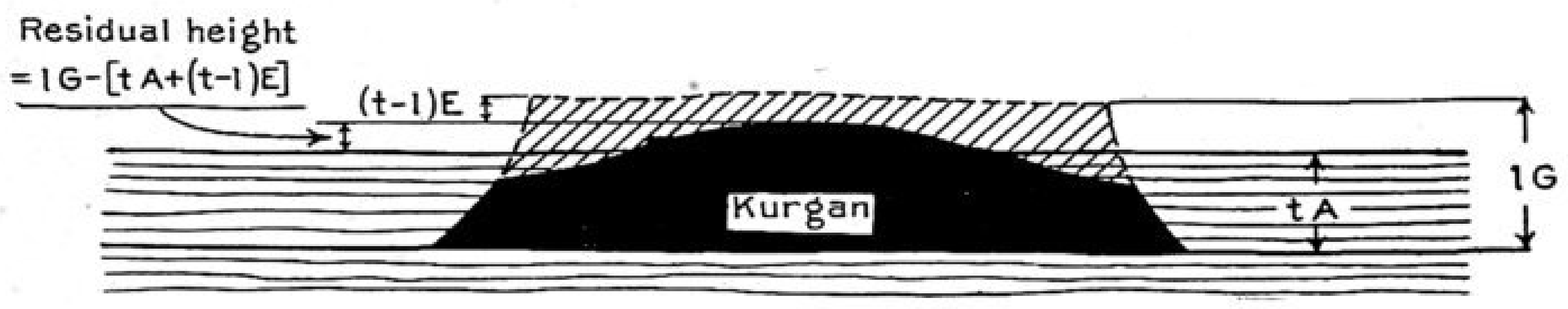

Fig. 470.—Diagram showing Relation between Erosion and Burial of Abandoned Kurgans. Cross-hatching represents wasted top of Kurgan.

(1) $$h = lG - [E(t-l) + At] \text{ when } t < l\frac{G+E}{A+E}$$

After that burial takes place, and the depth to which the top is buried at any time will be:

(2) $$d = A\left[t - l\frac{G+E}{A+E}\right] \text{ when } t > l\frac{G+E}{A+E}$$

or the rate of aggradation multiplied by the time since foundation minus the time that elapsed between then and the beginning of burial.

Changing the equation of obliteration somewhat in form, we get our third and most important equation.

(3) $$l = t\frac{A+E}{G+E} \text{ when } h = 0$$

which means that on aggrading areas any town, not occupied more than the ratio $\frac{A+E}{G+E}$ times the number of centuries since it was founded, has vanished from sight beneath the aggrading plain. The depth to which the eroded top of its accumulation has been buried can be found from equation (2).

Assuming Professor Pumpelly's values obtained at Anau, we have $G = 2$ and $A = 0.8$, and since it is from erosion the growth of plains is supplied and since the areas of erosion and aggradation seem to correspond in a general way and our culture mounds probably erode as fast as anything, we may for experiment assume $E = A$ or $E = 0.8$. Then $\frac{A+E}{G+E} = \frac{1.6}{2.8} = 0.57$ as a conservative ratio of much less error than equation $E = A$, because E partly compensates itself by division.