to each of them along with the point P will correspond a Wallace line of the 3rd order,

$$d_{123},\ d_{234},\ d_{341},\ d_{412}.$$

If from the fundamental point P perpendiculars be drawn to these four Wallace lines of the 3rd order, the four points thus obtained are situated on a straight line. This straight line will be a Wallace line of the 4th order, and will be denoted by d_{1234}.

Similarly if five points 1, 2, 3, 4, 5 be taken on a circle O, the projections of the fundamental point P on the five Wallace lines of the 4th order will be situated on a straight line. This straight line will be a Wallace line of the 5th order, and will be denoted by d_{12345}.

Hence the following general theorem :

If n points be taken on a circle, and one of them be removed, $(n-1)$ points are obtained to which correspond a Wallace line of the $(n-1)^{th}$ order. Thus there are n Wallace lines of the $(n-1)^{th}$ order. The projections of the fundamental point P on these n lines are situated on one straight line, called a Wallace line of the n^{th} order, and denoted by $d_{12\ldots n}$.

Note on an Equation of Motion.

By A. J. Pressland, M.A.

It can be shown by means of relative motion that if two bodies A and B move with velocities u and v in the same straight line, and a third body C move with velocity $u+v$ also in the same straight line, the space passed over by C is equal to the sum of the spaces passed over by A and by B in the same time.

Let A move with an initial velocity u and an acceleration f for an interval t.

Its velocity at the end of the interval will be $u+ft$ which call v.

Then $$u+ft=v \text{ or } u=v-ft.$$

Now let B move with velocity v and acceleration $-f$. Its velocity at the end of the interval t will be $v-ft$, that is u.

Hence the motion of B is the exact counterpart, or reverse, of that of A. Therefore each passes over the same space s.

Hence C passes over a space $2s$.

https://doi.org/10.1017/S0013091500030881 Published online by Cambridge University Press

But C moves with uniform velocity $u+v$, for the increase of velocity in A is neutralised by a corresponding decrease in B.

Therefore C passes over a space $(u+v)t$.

Hence
$$2s=(u+v)t$$
$$=(2u+ft)t$$
or
$$s=ut+\tfrac{1}{2}ft^2.$$

Therefore a body moving with initial velocity u and an acceleration f passes over in time t a space denoted by $ut+\frac{1}{2}ft^2$.

https://doi.org/10.1017/S0013091500030881 Published online by Cambridge University Press