$$
(9) \quad \begin{aligned}
&(1, 3, 4) = -\, w_2w_4/w_1^2, && (1, 3, 5) = 0, \\
&(1, 3, 6) = w_2^2/w_1^2, && (1, 4, 5) = w_3w_4/w_1^2, \\
&(1, 4, 6) = -\, w_2/w_1, && (1, 5, 6) = w_2w_3/w_1^2, \\
&(2, 3, 4) = w_4/w_1, && (2, 3, 5) = -\, w_3w_4/w_1^2, \\
&(2, 3, 6) = -\, w_2/w_1, && (2, 4, 5) = 0, \\
&(2, 4, 6) = 1, && (2, 5, 6) = -\, w_3/w_1, \\
&(3, 4, 5) = w_4^2/w_1^2, && (3, 4, 6) = 0, \\
&(3, 5, 6) = w_2w_4/w_1^2, && (4, 5, 6) = -\, w_4/w_1.
\end{aligned}
$$

Since the non-vanishing fractions in $w_1, \cdots, w_4$ all have second order numerators and a common denominator w_1^2, the theorem is proved. Substitution of these results in (8) and the results from (8) in I gives the explicit form of the translation surface $\varphi(w)$, in a form free from extraneous factors.

It is obvious that a complete set of invariants gives, in the present case of the congruence (m, n) or in the previous *binary* case of $(m, 1)$, a fundamental system of translation surfaces. For the congruence (2, 2), cut by a plane in a quadrilateral, the complete system consists of four surfaces $(aa'a'')^2$, $(bb'b'')^2$, $(aa'b)^2$, $(abb')^2$, all of degree 3 and class 4.

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PAPPUS. INTRODUCTORY PAPER.

BY DR. J. H. WEAVER.

(Read before the American Mathematical Society, April 24, 1915.)

ONE of the most wholesome tendencies in the study of mathematics today is the desire to give increased attention to the history and genesis of the subject. This tendency has led to a more careful study of the works of the old Greek mathematicians. Of these Pappus of Alexandria was among the last, and from the point of view of the historian one of the most important because it is in his works that we have the only authentic account of the lost works of a large number of preceding mathematicians.