26. Several years ago Professor Wilczynski showed that, by introducing a properly chosen system of projective coordinates, the equation of a non-ruled surface, in the vicinity of an ordinary point, may be replaced by a development of the form

$$z = xy + \tfrac{1}{6}(x^3 + y^3) + \tfrac{1}{24}(Ix^4 + Jy^4) + \ldots,$$

where I, J and all higher coefficients of this expansion are absolute differential invariants of the surface. The present paper is devoted to an investigation of those special surfaces for which I and J are everywhere equal to zero, completely determines these surfaces in certain elementary cases, and obtains a large number of properties for them.

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A FEW THEOREMS RELATING TO SYLOW SUBGROUPS.

BY PROFESSOR G. A. MILLER.

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SUPPOSE that a group G involves more than one Sylow subgroup of order p^m, and that a subgroup H of G involves more than one Sylow subgroup of order p^β, $0 < \beta < m$. The number of the subgroups of order p^β in H cannot exceed the number of those of order p^m in G, since any two Sylow subgroups of any group generate a group whose order is divisible by at least two distinct prime numbers, and hence each Sylow subgroup of order p^β in H occurs in one and in only one Sylow subgroup of order p^m in G.

When H is an invariant subgroup of G it is easy to prove that the number of the Sylow subgroups of G is a multiple of the number of the corresponding Sylow subgroups of H. In fact, all the operators of G which transform a subgroup of order p^m into itself must also transform into itself all the operators of the subgroup of order p^β in H which is contained in the particular subgroup of order p^m under consideration. Hence it results that all the operators of G which transform into itself a subgroup of order p^β contained in H must constitute a group involving k subgroups of order p^m and containing