Paper Communicated.

On the Classes of Congruent Integers in an Algebraic Körper.*

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Let $\mathfrak{m}$ be an ideal in an algebraic *körper*. All the integers in the *körper* can be classified into classes of congruent integers with respect to the modulus $\mathfrak{m}$. If α and α' be any two integers of class A, and β and β' be those of class B, the products $\alpha\beta$ and $\alpha'\beta'$ always belong to one and the same class. Let it be called C. In this sense these classes can be composed by multiplication, and we write $AB=C$. If we consider only those classes which consist of integers relatively prime to $\mathfrak{m}$, then these reduced system of classes form an Abelian group, which we shall call $\mathfrak{M}$.

Since $\mathfrak{M}$ is Abelian, it contains a system of elements (classes) called bases, say $A_1, A_2, \ldots\ldots, A_s$, such that each element of $\mathfrak{M}$ can be represented uniquely in the form

$$S=A_1^{\alpha_1}\,A_2^{\alpha_2}\ldots\ldots A_s^{\alpha_s}, \qquad \begin{matrix} \alpha_i=0,\,1,\,2,\ldots\ldots,\,a_i-1, \\ (i=1,\,2,\ldots\ldots,\,s) \end{matrix}$$

where a_i denotes the order of the element A_i. Systems of bases may be constructed in different ways, and the orders of the bases, of course, vary according to different systems of bases But, if we decompose the orders into powers of distinct prime

* Since this paper was read, my attention was called to Georg Wolff's inaugural dissertation "Ueber Gruppen der Reste eines beliebigen Moduls im algebraischen Zahlkörper" (Giessen, 1905), which seems to have escaped the notice of the writers referred to in the present paper. In Wolff's paper, the results obtained in the first half of the present paper are derived in a quite different manner. Moreover, as the chief interest of the present paper lies in its second half, the knowledge of the existence of Wolff's paper will not in the least detract the merit of the present communication. R. Fujisawa.