the factorization of the rational primes in an algebraic number field and its relation to the decomposition of $f(x)$ with respect to the modulus p, where $f(x) = 0$ is an equation one of whose roots generates the field. The last part of the chapter considers the prime factors of the field discriminant and also the factorization of the rational primes in cyclotomic fields.

The first part of chapter nine contains the theory of orders (Dedekind, Ordnung; Hilbert, Ring) in a field, and the ideals of any order. The second part of the chapter is devoted to Galois domains and their sub-domains.

Chapter ten deals with the analytic theory of algebraic numbers and develops the transcendental expression for the number of classes of ideals in a field.

Chapter eleven contains the development of the expression for the number of classes of the quadratic and cyclotomic fields and the proof of Dirichlet's theorem regarding arithmetic progressions.

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Report on Radiation and the Quantum-Theory. By J. H. Jeans. London, Fleetway Press, Ltd., 1924. 86 pp.

The first edition of this report was written in 1914 and was published by the Physical Society of London. In preparing the new edition the writer has omitted some of the parts in which he says there is an *apologia* for the defects and inconsistencies of the theory and has made numerous additions which add to the charm and lucidity of the presentation. The author's remark "that the quantum theory need no longer be considered on the defensive" aptly describes the present situation; in fact some writers have a feeling that the apologia must now be made for the classical electrodynamics.

In the first chapter Jeans points out that the smallness of the total density of radiant energy in temperature-equilibrium with matter compared with that of the heat-energy in the matter cannot be explained on the basis of Newtonian mechanics or by a supposed analogy with a vibrating elastic system immersed in a fluid such as air or water, for it is known by experience that the energy of the elastic system is finally transformed into heat energy of the fluid. The relative smallness of the density of the radiation at 0° C is quite startling in the case cited, being 4×10^{-5} ergs per cubic centimeter as compared with 8×10^{9} ergs per cubic centimeter in the matter.

In the next chapter it is shown how the classical electrodynamics in combination with the kinetic theory of gases leads to the radiation formula which is associated with the names of Rayleigh and Jeans.

This formula is correct in the region of long wave-lengths or at very high temperatures when the density of radiation is very large