part. The succeeding four chapters are taken up with three-dimensional phenomena and related mathematical problems under the headings of Stokes' stream function, spheres and ellipsoids, solid moving through a liquid, vortex motion. The last chapter is devoted to the introduction of the equations of motion for viscous fluids and concludes with a brief description of boundary layer theory.

While this book can be recommended as a text in classical hydrodynamics for advanced graduate student engineers, it will take a more important place as a reference work and as a source of many original approaches in the manner of presentation for those teaching the subject. The over five hundred exercises ranging from easy to very difficult should prove very interesting since many were taken from the official examinations for Constructor Lieutenants at the Naval College and for the degree of M. Sc. at the University of London.

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Convergence and Uniformity in Topology. By J. W. Tukey. Annals of Mathematics Studies, no. 2. Princeton, University Press, 1940. 9+90 pp. $1.50.

The extension of metric methods to non-metrizable topological spaces has been a principal development in topology of the past few years. This has occurred in two directions: one through a rebirth of interest in Moore-Smith convergence due to results of Garrett Birkhoff, and the other through the concept of uniform structure due to André Weil. In this pamphlet these ideas and their interrelations are given a full and detailed treatment. Many of the results are new. This is likewise true of the point of view and much of the mechanism.

Chapters I and II are concerned with set theory, partially ordered sets, Zorn's lemma, and directed sets. In particular a *stack* (=the set of finite subsets of a given set, ordered by inclusion) is a directed set. Directed sets are classified into cofinally equivalent types, and these are found to be partially ordered. Chapter III introduces the *phalanx* (a function from a stack to a topological space T). It is proved that the topology of T is describable by the convergence of its phalanxes. Chapter IV considers compactness and equivalent properties in terms of phalanxes. The *biggest* compactification of a space is defined and constructed from ultraphalanxes. Chapter V is concerned with coverings of a space (by open sets), and the equivalence of the existence of families of coverings to the existence of metrics and pseudo-metrics. This leads naturally to the notion of *uniform structure* (Chapter VI). A uniform structure is a family $\{U\}$