the third order with both curves of a conjugate net at a point is deduced, and the cones in the bundle and the intersections of the bundle with the tangent plane are studied. Certain polar relations with respect to the quadrics of the bundle are presented. Certain loci and envelopes are investigated at a point of the surface in connection with a pencil of conjugate nets. Among these are the principal cubic, which is the locus of the principal points, and the principal conic, which is the envelope of the principal joins. Davis (*Contributions to the theory of conjugate nets*, doctoral dissertation, Chicago, 1932) defined and studied several canonical configurations, considering the conjugate net as parametric. In the present paper a study is made of Davis's canonical configurations in asymptotic parameters. (Received October 21, 1943.)

47. E. J. Purcell: *Variety congruences of order one in n-dimensional space.*

A variety congruence of order one in $[n]$ is an algebraic ∞^k-system of varieties, each of dimension $n-k$ and order h, in n-dimensional projective space, such that through a generic point of $[n]$ one and only one V_{n-k}^h of the system passes (k any positive integer not greater than n, and h any positive integer). The results of very many writers on Cremona transformations, Cremona involutions, $(1, m)$ correspondences, and line or curve congruences of order one can be obtained by specializing this paper. (Received October 7, 1943.)

Topology

48. K. T. Millsaps: *A note on generalized Hilbert space.*

By analyzing an example formulated by A. Tychonoff, Math. Ann. vol. 111 (1935) p. 768, the spaces H^ρ, $0 \leqq \rho \leqq \infty$, are defined in a manner analogous to that for classical Hilbert space; some basic properties such as linearity, necessary and sufficient conditions for normability, completeness, separability, and sufficient conditions for local non-convexness are proved. (Received October 30, 1943.)

49. R. L. Moore: *Concerning webs in the plane.*

Among other things it is shown that if a compact plane continuum contains a web it is one. (Received November 25, 1943.)

50. M. E. Shanks: *Monotone decompositions of continua.*

In this paper the author considers the lattice $\mathcal{D}_m(X)$ of all monotone upper semi-continuous decompositions of the compactum X. This lattice is well suited for the study of the structure of continua. Two continua X and Y are homeomorphic if and only if there is an isomorphism carrying $\mathcal{D}_m(X)$ onto $\mathcal{D}_m(Y)$ which makes simple decompositions correspond to simple decompositions. By means of a factorization theorem it is shown that if X is a dendrite or a linear graph then $\mathcal{D}_m(X)$ is isomorphic to $\mathcal{D}_m(A)$, where A is an arc. Spaces for which $\mathcal{D}_m(X)$ is isomorphic to $\mathcal{D}_m(A)$ are hereditarily locally connected. A class of continua called generalized dendrites is defined and characterized as those continua for which $\mathcal{D}_m(X)$ is a sublattice of the lattice of all upper semi-continuous decompositions of X. Both dendrites and Knaster continua are generalized dendrites, and both make $\mathcal{D}_m(X)$ distributive. A characterization of dendrites is obtained. (Received October 22, 1943.)

51. G. E. Schweigert: *Periodic analysis for onto-homeomorphisms of semi-locally-connected continua*. Preliminary Report.

$T(S)=S$ denotes any homeomorphism of a semi-locally-connected continuum. The least (invariant) A-set A which contains all cyclic elements of finite period is non-vacuous. Moreover $T(A)=A$ is componentwise periodic, that is, components of the complements of invariant A-sets in A have finite periods. It is shown that the action of $T(A)=A$ resembles that of an elementwise periodic homeomorphism (each cyclic element has finite period) provided certain free cyclic chains are used instead of cyclic elements. This involves a classification of the orbits of cyclic elements E with infinite period by means of the integer n for which the cyclic chain $C(E, T^n(E))$ has no invariant cyclic element (a property first studied by Ayres). It is also shown that the orbits of the components of $S-A$ are influenced by the periodicity in A and hence a pattern is formed for the action of $T(S)=S$ in the large. (Received October 21, 1943.)

52. G. T. Whyburn: *Mapping classes for locally connected continua*.

If A and B are locally connected continua, conditions are developed under which the limit mapping of a uniformly convergent sequence of continuous transformations of A onto B will be monotone, interior or quasi-monotone respectively. In particular it is shown that the limit mapping of any uniformly convergent sequence of quasi-monotone mappings of A onto B is itself quasi-monotone. Thus the class of all quasi-monotone mappings of A onto B is closed in the space B^A of all mappings of A onto B. It results from this that the limit of a uniformly convergent sequence of interior mappings of A onto B will be interior provided it is light. (Received October 22, 1943.)