Since the total number of records is only sixteen and there is no evidence to substantiate any of these suggestions, they are of little value. It is possible that the phenomenon has a wider significance than a mere Hippoboscoid-louse relationship, especially in view of the following records: Calandruccio⁴ (1890) has noted instances of *Pediculus* being conveyed by flies; Mitzmain⁵ in connexion with research on the insect transmission of surra in Carabaos has found a species of Dipteron, *Lyperosia* sp. carrying the louse *Hæmatopinus tuberculatus* Burneister (1,800 flies yielded 620 specimens of lice); and Peus⁶ (1933) has published two instances of the louse *Trichodectes tibialis* Piaget being found attached to *Culicidae*. Ewing's suggestion that the lice attach themselves to the Hippoboscids as a result of the latter becoming temporarily warmed by contact with the skin of the bird is certainly wrong, because the lice which are already on the bird have presumably the temperature of the host, and therefore the acquired host temperature of the Hippoboscids is no inducement for the migration of the lice to the flies. Many more records and experimental research are necessary before conclusions of any value can be arrived at concerning these relationships.

GORDON B. THOMPSON.

Department of Entomology,
British Museum (Natural History),
London, S.W.7.

¹ Sharp, *Proc. Ent. Soc. Lond.*, p. 30.

² Warburton, *Parasit.*, 20, 175-178.

³ Ewing, *Ann. Ent. Soc. Amer.*, 20, 245-250.

⁴ Calandruccio, *Atti Accad. Gioenia di Sci. Nat. in Catania*, 2, p. 135.

⁵ Philip, *Agric. Rev.*, 5, 673-674.

⁶ Peus, *Z. Parasit.*, 5, 740-741.

Creepers and Single-Comb Linkage in Fowl

Recently we have reported on linkage tests between the genes for single comb and for the creeper traits in fowl¹. Afterwards, the back-cross matings of heterozygous rose-combed Creeper hens to Leghorn cocks were continued through the third laying year of the hens. During this period we obtained a total of 781 offspring (hatched chicks and classifiable dead embryos), distributed as follows:

Normal Rose comb	Creepers Single comb	Creepers Rose comb	Normal Single comb
358	420	1	2

There was 0.38 per cent of crossing-over. These data added to our earlier ones bring the total offspring of matings between heterozygous Creeper females and normal males to 4,313 individuals with 0.56 per cent of crossing-over, and the total offspring of all back-crosses to 7,408 chicks with 0.39 per cent crossing-over.

The results of matings of heterozygous Creeper females and Leghorn males during the first three laying years were as follows:

	Number of offspring	Per cent crossing-over
1st laying year	2,347	0.68
2nd " "	1,185	0.25
3rd " "	781	0.38

While with such a low frequency of crossing-over it is

difficult to obtain critical evidence for slight changes of crossing-over with age, it may safely be concluded from our results that, in the case of this autosomal linkage group, no striking changes in the percentage of crossing-over take place with advancing age of the hens. Haldane and Crew have reported an increase with age in the frequency of crossing-over in sex-linked genes of the fowl². While sex-linked genes may well behave differently in this respect, a verification of their results by further tests would seem highly desirable.

WALTER LANDAUER.

Storrs Agricultural Experiment Station,
Storrs, Connecticut.

¹ Landauer, W., "Studies on the Creeper Fowl. V. The Linkage of the Genes for Creeper and Single-Comb", *J. Genetics*, 23, 1932.

² Haldane, J. B. S., and F. A. E. Crew, "Change of Linkage in Poultry with Age", *NATURE*, 115, 641; 1925.

Co-operation in Science

A MATTER of some importance is raised by Dr. S. C. Bradford's letter in the issue of *NATURE* for September 23, for there can be little doubt that a greater measure of co-operation is needed between the various abstracting journals in Great Britain. I beg leave to doubt, however, whether Dr. Bradford's remedy is the best one for the present state of affairs. Are we not in danger of forgetting that the Universal Decimal Classification (or any other) is only a means to an end, and that the ultimate user of the abstract or index is the main person to be considered? The adoption of the U.D.C. by the various abstracting and indexing bodies would give us no improvement in their service, except in the direction of a consolidated bibliography covering all the sciences (which is not their immediate aim), and would leave the compiler and the user of the service faced with all the overlapping and the gaps that exist to-day, whilst the suggestion that abstracting and indexing bodies should do the abstracting and classification for subjects other than their own, and pass these on to the appropriate sister bodies, is one that would surely be destructive of reliable and efficient work.

Indexing is far from being mechanical, requiring for any particular piece of work a single mind; and it is to be hoped that no one responsible for the issue of an abstract or index journal will accept second-hand contributions from those over whom he has no control and who are working in possibly quite distinct fields. The main purpose of abstract journals is to give those interested a summary survey of what is being done here and abroad—only secondarily is it a work for subsequent reference—and reliability and completeness is the first requisite of such a journal, and not the precise method of arranging the entries, which can safely be left to those responsible for its publication.

Co-operation by other methods than the common adoption of a particular classification scheme is wanted. When this has been achieved, standardisation of format, of arrangement, and of classification, could be considered—but from the only point of view that would justify it, namely, whether it would increase the value to the user, who, be it remembered, is not represented only by large bibliographical institutions.

ALLAN GOMME.

The Patent Office,
London, W.C.2.