area in which a large number of cases were found. A large yield of flies was obtained, mostly large, blow flies with only an occasional small house fly and a few wasps and moths.

About 2,000 etherized flies were put in a glass bead grinder, 200 cc of sterile distilled water added, the whole ground to a homogeneous fluid and then centrifuged. To the supernate was added 15% ether and the mixture was left in the icebox over night. The next morning the suspension was poured into a large Visking casing, which was hung between electric fans, and it dried to a residue in from approximately 72 to 96 hours. The latter was then suspended in 120 cc of normal physiologic saline and 15% ether was added; the next day the suspension was tested for sterility. The mixture was still contaminated, and it was again treated with ether. When it was sterile, the ether was drawn off from the suspension under a partial vacuum.

Two cc of the suspension was injected intracerebrally into a *M. mulatta* monkey, 0.5 cc was instilled into each nostril daily for 5 days, and 35 cc intraperitoneally. The intraperitoneal injection was repeated on the fourth day.

This monkey developed muscle weakness on the seventh and unmistakable poliomyelitis on the tenth day. It was sacrificed. Another animal injected in a similar manner also developed the disease. A 10% suspension of the cord of the first animal sacrificed was injected into a third monkey, and the disease was produced.

A second isolation has been made from flies collected in an outhouse. Sabin and Ward[8] have also isolated virus from flies collected this season from 3 urban areas—2 in Cleveland, Ohio, and one in Atlanta, Georgia.

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Hereditary Predisposition to Sensitization in Guinea Pigs.*

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Blocking experimental studies on the inheritance of allergy has been lack of a sensitizing agent which would discriminate sharply

[8] Sabin, A. B., and Ward, R., personal communication.

* This investigation was aided by a grant from the Charlton Research Fund of Tufts College Medical School.

between individuals within a species. Chase[1] showed that it was possible to set up lines of guinea pigs of different susceptibilities toward 2:4 dinitrochlorobenzene. However, crosses between members of the more and less susceptible colonies were not undertaken because the latter group always contained susceptible individuals, and thus the conditions for a precise genetic analysis were lacking. Some years ago we also attempted to breed out a guinea pig strain which was not susceptible to sensitization with 2:4 dinitrochlorobenzene, and meeting with similar difficulties, thought it advisable to search for a less universal sensitizing agent, which discriminated more sharply between susceptible and resistant animals. Allyl isothiocyanate was tried because, although Landsteiner and DiSomma[2] had attempted to sensitize guinea pigs with this substance without success, they had found that one of 6 humans treated became hypersensitive, a situation favorable to heredity work. It was not deemed advisable to attempt large scale sensitization experiments on humans with this substance since mustard is a common article of diet, and therefore a new attempt was made to sensitize guinea pigs.

Treatments with allyl isothiocyanate were carried out by applying one drop of mustard oil to the back, after clipping the hair, twice a week for 3 to 5 weeks. Tests were performed at least 2 weeks after the last treatment by spreading one drop of a 5% solution of mustard oil in dioxane on the flank after removing hair with a clipper, followed by treatment with an electric shaver before reading on the following day.

Of 57 albino guinea pigs treated and tested in this way, 6 showed moderate to strong reactions and 5 others were weakly positive. A typical experiment with 12 pigs is shown in Table I, Column A.

Further treatment had comparatively little effect in increasing intensity of sensitization or the proportion of hypersensitive animals.

In a similar but small scale experiment with alpha naphthyl isothiocyanate, with treatments of one drop of a saturated acetone solution spread on the back, some evidence of sensitization was observed. With phenyl isothiocyanate sensitization effects were very slight or negative and methyl, isopropyl, and n-butyl thiocyanates gave negative results. Because of the occasional nature of sensitization in this group, small scale negative results necessarily carry little weight.

Selective breeding experiments carried out over a period of almost 3 years and involving 4 generations of the animals most readily sensitized to allyl isothiocyanate have apparently succeeded in pro-

[1] Chase, Merrill W., *J. Exp. Med.*, 1941, **73**, 711.

[2] Landsteiner, K., and DiSomma, A. A., *J. Exp. Med.*, 1938, **68**, 509.

TABLE I.

Combined table. All readings were made on the day following the application. Untreated controls and animals before treatment with allyl isothiocyanate were all negative.

A—Unselected guinea pigs		B—Offspring of improved strain	
No. of pig	Animals treated with allyl isothiocyanate	No. of pig	After treatment with allyl isothiocyanate
1	Negative	13	Faintly pink
2	"	14	Pale "
3	Almost negative	15	Faintly "
4	Pale pink	16	Pale "
5	Negative	17	Pink
6	"	18	Pale "
7	"	19	" "
8	"	20	" "
9	"	21	" "
10	Faintly pink	22	Pink
11	Almost negative	23	"
12	Negative	24	Pale "

ducing a stock practically all of which are readily and strongly sensitized to mustard oil, as illustrated by the combined test performed on the members of several litters which is given in Table I, Column B.

A comparison of Columns A and B, shows that the increased reactivity of the latter group as compared with unselected animals is very striking, after sensitization. No increased reactivity to the 5% dioxane solution before sensitization was observed in the improved strain. Cross tests with animals sensitized to 2:4 dinitrochlorobenzene showed that the sensitization was specific. Thus segregation of an hereditary character determining capacity for sensitization by this substance seems to have been accomplished. A strain of pigs resistant to sensitization is being bred out for heredity studies. This effort has considerable hope of success, since most unselected guinea pigs cannot be sensitized to allyl isothiocyanate. Other questions, such as whether increased capacity for sensitization is general or specific, are being examined.

Summary. Sensitization to allyl isothiocyanate was accomplished in a small percentage of unselected guinea pigs. By selective breeding a strain was obtained practically all the members of which could be readily and strongly sensitized with this substance. A strain resistant to sensitization is being further bred out.