identified species of Malpighia bearing small, red fruit. Five jars of homemade "Barbados cherry" jelly were also obtained for analysis. The identity of the species of Malpighia used in the preparation of this jelly is unknown to the author. A small amount of lime juice was used in place of commercial pectin in the preparation of the jelly.

The colorimetric method described by Loeffler and Ponting (*Ind. eng. Chem.* (Anal. ed.), 1942, 14, 846–849) was followed in making these ascorbic acid determinations except that a calibration curve was used instead of the formula recommended by these workers for converting the colorimeter readings into milligrams of ascorbic acid per 100 grams of fruit. The results of the analysis are given below:

TABLE 1

DATA ON THE ASCORBIC ACID CONTENT OF SOME MALPIGHIA FRUITS AND JELLIES

Material	Description of sample	No. of analyses	Ascorbic acid content (mg./100 grams edible fruit)	
			Average	Range
M. punicifolia L.				
	Tree A			
	Slightly over-ripe	4	1,219	1,028–1,378
	Firm ripe	8	1,579	1,268–1,778
	Almost ripe	4	2,103	2,019–2,172
	Beginning to ripen	8	3,250	2,710–3,774
	Unripe	4	4,468	4,090–4,676
	Trees B_1 and B_2			
	Firm ripe	2	2,712	2,712–2,712
	Unripe	2	4,462	4,400–4,524
	Tree C			
	Firm ripe	4	1,699	1,564–1,782
M. coccigera L.				
	Ripe	4	69	64– 74
Malpighia sp.				
	Ripe	4	17	14– 21
Barbados cherry jelly				
	Individual jars			
	#1	3	683	674– 688
	#2	3	499	499– 500
	#3	3	763	725– 807
	#4	3	541	538– 546
	#5	2	509	492– 525

It is apparent from these data that the *M. punicifolia* grown in southern Florida is also an excellent source of ascorbic acid. These unripe fruit were found to contain considerably more ascorbic acid than those grown in Puerto Rico. The other two species of Malpighia were found to contain a comparatively small amount of ascorbic acid. The high ascorbic acid content of the jelly, highly acclaimed for its flavor and color, is particularly noteworthy, since much of the fruit of the so-called Barbados cherry is utilized in its preparation. An average serving of approximately three level teaspoonfuls of this jelly will more than supply the daily requirement of 100 mg. of ascorbic acid.

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Notes on the Results of Army Intelligence Testing in World War I

Publications during the past two years have indicated a renewed interest in the Army tests of World War I with regard to their significance for the problem of Negro-white differences in intelligence. While most studies have been primarily concerned with the Alpha examination, M. F. A. Montagu's work (*Amer. J. Psychol.*, 1945, 58, 161–188) suggests that a more extensive consideration of the Beta results may be worth while.

The Beta is a performance test designed for use with illiterate and foreign groups in the population. Although it is widely recognized that socioeconomic opportunities play an important role in determining Alpha scores, it is not generally clear that Beta scores are similarly influenced. For this reason it may be incorrectly assumed that, while Negro-white differences in Alpha level cannot be taken at face value, Beta differences (which Montagu found to be in the same direction) indicate innate 'racial' inequality. It is our purpose here to show, however, that the Beta levels for the various states are significantly related not only to Alpha levels for the same states but also to yearly educational expenditures and per capita incomes. These correlations are presented in Table 1.

TABLE 1

RANK-ORDER CORRELATIONS BETWEEN MEDIAN BETA SCORES FOR THE VARIOUS STATES* AND MEDIAN ALPHA SCORES,* ANNUAL EDUCATIONAL EXPENDITURES (1910), AND PER CAPITA INCOMES (1919)

(All coefficients significant at 1 per cent level)

	Educational expenditures per capita population, 5–17 yrs.†	Per capita income‡	Alpha (white)	Alpha (Negro)
Beta (white)	.64 (.81)§	.50 (.64)§	.67	..
Beta (Negro)	.72 (.76)§	.67 (.72)§	..	.65

* Data from Montagu. N ranges from 47 to 49 in the case of the correlations for whites and from 23 to 24 in the case of those for Negroes.

† Expenditures for public elementary and secondary schools (1910). Data from *Statistical Abstracts of the United States*, 1930, No. 52, U. S. Dept. of Commerce.

‡ Data from W. C. Bagley's *Determinism in education*. Baltimore, Md.: Warwick and York, 1925.

§ Figures in parentheses are comparable correlations with median Alpha scores.

Why should there be a significant relationship between the intelligence of literate and illiterate samples from the populations of the various states? The hereditarian might, of course, argue that the Alpha-Beta correlation for whites merely reflects the presence in the industrialized northern states of intelligent but non-English-speaking immigrants, although in other contexts the relatively low intelligence scores of these immigrant groups cause them to be referred to as the 'dregs' of Europe. However, hereditarians can only explain away the Alpha-Beta correlation for Negroes by postulating selective migration, an hypothesis which Klineberg's work (*Race differences*. New York: Harper, 1935) has largely invalidated. It is probably most warranted to conclude from the correlations presented here that Beta scores, like Alpha scores, are strongly influenced by cultural factors concomitant with the socioeconomic levels of the states; verbal and numerical facility are not the only evidences of environmental forces. From this point of view group differ-

ences in intelligence, whether measured by Alpha or Beta, are to be interpreted in similar terms.

In an early survey of the results of Army intelligence testing during World War I, W. C. Bagley (*Determinism in education.* Baltimore, Md.: Warwick and York, 1925) emphasized the large difference between the levels of northern and southern states. "This difference is not a gap," he remarked, "it is a chasm" (p. 69). What will the results for World War II show? The relationship between test scores and educational expenditures described above affords a basis for prediction.

The rank-order correlation between state expenditures for education in the years 1910 and 1932 is .85. The ratio of expenditures by the 10 highest states to those of the 10 lowest states in 1910 is 5.5:1, while the ratio for 1932 is 4.2:1. The same 10 southern states comprised the lowest group both in 1910 and 1932. In neither year was a southern state included in the highest group. From these data it seems reasonable to predict that the results for World War II will show north-south differences which, if not on the order of a 'chasm,' will nevertheless represent a wide gap. The validation of this prediction would imply the failure of social plans based on the doctrine of states' rights and the need for a stronger federal emphasis in meeting the problems implicit in the data under discussion. (It should be recognized, of course, that differences in educational expenditures are paralleled by a variety of other socioeconomic differences; educational expenditures merely provide a convenient index of the totality of other factors.) A national rather than a state-wide perspective would be indicated to ensure the democratic development of the human resources of the United States.

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Embryonic Induction in Regenerating Mesenchyme

A series of reports have been made by the undersigned on the development of various regions of the early embryo differentiating in the midst of regenerating tissue of *R. pipiens larvae* (*J. exp. Zool.*, 1940, 83, 191; 1941, 87, 403; 1942, 90, 353; 1943, 93, 185; 1944, 95, 61; 1944, 97, 1). The development of some of the same early embryonic areas in salt solution has also been studied (*J. exp. Zool.*, 1945, 100). The work has shed light on the embryonic induction of several different organs, including epidermis, nose, horny jaws, and suckers. For these and other organs the series of studies have provided data on the appearance and extent of competence, the location of the normal inductor, the time during gastrulation at which the inductor acts, and the presence of similar inductors in regenerating tissue. These results make up the bulk of the various reports, but it is the effect of the embryonic grafts on the regenerating tissue which now requires brief comment.

It now appears that the effect of embryonic transplants on blastema mesenchyme is not as great as was at first believed. In the first of the blastema studies referred to above the presumptive medulla from the neurula stage was grafted into regenerating tissue, and in some cases (11 per cent) a small vesicle was formed from the blastema tissue next to the embryonic medulla. Since these vesicles were about the same size and shape as an early ear vesicle, were composed of a single layer of cells, and were situated just adjacent to the transplanted medulla, they were interpreted as probably an abortive attempt on the part of the blastema tissue to form an ear vesicle. However, it was emphasized that none of these vesicles ever developed an endolymphatic duct, or sensory and nonsensory areas, and that the method of formation of the vesicles from the blastema tissue was entirely different from the normal formation of an ear. Hence, these vesicles were described as structures similar to ear vesicles, but not definitely identifiable as such.

In the five extensive subsequent reports on embryonic grafts in regenerating tissue and in several unpublished studies, many different embryonic inductors were grafted into the blastema. These include the eyecup, and all regions of the roof of the archenteron of the late gastrula and of the early neurula (unpublished). Several hundred such transplants have been studied, and in no case is there any indication of a definite inductive action of the embryonic inductor on the regenerating tissue. To test this question further, a series of grafts was made of the dorsal lip of the early and middle gastrula into the blastema (unpublished). Although this is perhaps the most powerful embryonic inductor known, the regenerating tissue again showed no inductive response.

These results, based on such an abundance of data, suggested that the small vesicles originally found adjacent to the grafted medulla were probably not abortive ear vesicles after all. A restudy of the protocols of the original experiments showed that during the course of the work the method of grafting the embryonic tissue into the blastema was slightly changed. In all cases a thin flap of regenerating tissue was separated in part from the blastema, and the graft placed under this flap. However, at first a small amount of blastema tissue, including a part of the regenerating notochord, was cut out and discarded in order to make room for the graft. During the course of the work, however, it was found that better results followed merely making the blastema flap, without removing any regenerating tissue. The small vesicles adjacent to the grafted medullas all appeared in the first experiments made, in which the regenerating notochord was purposely somewhat injured during operation. It seemed possible, therefore, that the host filum terminale was also injured during operation, and that occasionally a small section of the growing filum was separated from the rest of the filum, forming a small vesicle.

To test this possibility a series of control operations was recently performed in which a blastema flap was made and a small portion of the regenerating notochord and adjacent mesenchyme removed, but no embryonic tissue was transplanted beneath the flap. In three of the four cases studied, the host filum terminale was definitely affected by the operation. A partial twinning of