Search—conducted jointly by Science Clubs of America, Science Service, and the Westinghouse Electric and Manufacturing Company—differences between the scores of the boy entrants and the girl entrants on the Science Aptitude Examination have been noted.[2] The first year, for example, 22 of the 2,460 boys with complete entry materials made fewer than 5 errors, whereas this was not true of any of the 715 girls.

Yet the Science Aptitude Examination has been given under uniform conditions to boys and girls. It is open to all high-school seniors in the continental United States, and is equally publicized among them, since announcements and contest rules have been sent each year to every high school and secondary school in the country, public, parochial and private. The examination is essentially a self-administering paper-and-pencil academic aptitude test using materials drawn from science. The first two forms consisted of paragraphs from various fields of science, and questions based on these paragraphs; the third year the examination was divided equally into a paragraph reading test and scientific problems with multiple-choice answers. Copies of the examination questions and answers for all three years may be obtained from Science Service, 1719 N St., N.W., Washington 6, D. C.[3]

Table 1 shows the differences in the mean scores of the boys and the girls on the examination for each of the three years. The critical ratios (differences divided by their standard error) are of an order to indicate that these differences are not due to chance variations.

TABLE 1

SCORES OF BOYS AND GIRLS ON SCIENCE APTITUDE EXAMINATION

	Boys			Girls			Critical ratios
	Mean	σ	N	Mean	σ	N	
First year ..	75.3	12.2	2,460	67.5	12.9	715	14.4
Second " ..	44.9	10.8	2,507	39.0	8.8	974	16.6
Third " ..	46.7	10.5	2,021	39.7	9.2	910	18.2

The same sort of comparison will be made in the forthcoming Fourth Annual Science Talent Search and in succeeding years. In the meantime, it would appear that the decision was correct that the ratio of boys to girls among the 260 honorable mentions, and among the 40 trip winners to Washington, D. C., in each annual contest should not be equal. The proportion of boys and girls in these groups was actually based on the ratio of boys to girls who entered the contest. The fact that the 40 trip winners in the Third Annual Science Talent Search consisted of 28 boys and 12 girls, rather than half boys and half girls, probably means that a larger number of future outstanding scientists have been chosen. If 300 in the "honors group" were to be selected without reference to the proportion of girls originally completing entrance materials, it seems likely that the number of girls in this top group would be even smaller than under the present controlled system.

Thus far the sex differences in scores on the examination have been consistent each year, and they are statistically significant. They are probably due, however, to environmental and cultural factors rather than to inherent biological differences. This suggests, then, the desirability for greater attention in the primary and secondary schools to scientific training for American girls.

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[2] The selection techniques were briefly described by us in SCIENCE, 99: 319–320, April 21, 1944.

[3] The complete Science Aptitude Examination for the first year is reproduced in "Youth Looks at Science and War," Washington, D. C., Science Service, and New York, Penguin Books, 1942, pp. 110–131; and typical questions for the second year in "Science and the Future," Washington, D. C., Science Service, 1943, pp. 117–121.

REMARKS ON THE HISTORY OF SCIENCE IN RUSSIA

IN the volumes of SCIENCE a notable contribution to the appreciation of scientific progress has been the generosity of the editors in giving space for discussion of articles and correction of errors appearing in the magazine. We, the undersigned, feel obliged in the interest of truth to call upon that generosity now. We refer to the leading article in the issue of June 2, on the history and activities of the U.S.S.R. Academy of Sciences.

The story of the growth of Russian science is impressive enough without the embellishment of inaccurate and misleading assertions. The most shocking such assertion is: "However, the influence of Newtonian philosophy made no great progress in Russia at this time. In contemporary France and Germany, Newton was rapidly accepted. The cause of this neglect of Newton in the vigorous new life of Russian interest in mathematical science is not apparent. It was not until two centuries later that formal recognition of Newton become evident" (p. 440).

Mr. Frederick E. Brasch as consultant in the history of science of the Library of Congress ought to know that acceptance of Newtonian physics on the continent of Europe was not rapid but surprisingly slow. For almost fifty years after the publication of the "Principia" the leading scientific body in Europe, the Paris Academy of Sciences, still adhered to Cartesian physics and only very gradually, chiefly under the influence of Maupertuis, Clairaut and D'Alembert, Cartesian physics gave way to Newtonian. The fact that Clairaut's "La Théorie de la Lune Déduite du Seul Principe de l'Attraction" (St. Petersburg 1752) received the prize of the Imperial Academy of St. Petersburg indicates that Newton was recognized in Russia as early as in other countries of the Continent. To say that he was not recognized there for about two centuries implies that until the twentieth century Russia had no physics, no mechanics, and no astronomy, which is clearly absurd.

As to the statement (p. 440): "Further expression of appreciation of Newton's works and influence on scientific thought is indicated by a translation in 1936 into Russian of the "Principia," first edition. . . ." If "first edition" means that the 1936 edition is the first Russian translation, that is false, because the first Russian translation was published by A. N. Kryloff in 1916. If it means translation of the first edition of the "Principia," that is false, because the translation was of the third edition.

On page 438 we find the following statement: "The University of Moscow opened in 1755, and so great was the intellectual growth among the Russian people that other cities soon established universities." This again is untrue. The first universities to be founded in Russia after Moscow were the University of Kharkov in 1804, the University of Kazan in the same year, and the University of St. Petersburg in 1819. A lapse of almost fifty years from 1755 to 1804 hardly is "soon," and it reveals that intellectual growth among the Russian people at that time was not so great as the quoted statement suggests.

Mr. Brasch also quotes from Alexander Petrunkevich of Yale University: "Applied science, such as engineering, was for a long time looked upon [in the light of special knowledge, somewhat detrimental to broad education], with the additional stigma of mistrust." It is difficult to perceive what this statement means. If it means that engineering education or the engineering profession did not have sufficient support or encouragement, the facts contradict. Russian engineering schools are among the oldest of their kind. The School of Mining Engineers was founded in 1772 and became a center of studies in geology, metallurgy and metallography. Tschernoff, whose fundamental laws (1868) form a basis for the subsequent development of metallography, was a professor of this school; so was the famous crystallographer, E. Fedoroff.

The Institute of Engineers of Ways of Communication was organized in 1807 after the pattern of the best French schools of that time. Among the professors of this school we find such names as Clapeyron (1799–1864) and Lamé (1795–1870), who were among the founders of the theory of elasticity. Perhaps due to their influence mechanics of materials and theory of elasticity always occupied an important place in the curricula of Russian engineering schools. The standards of these schools were high and it is not surprising that they produced several outstanding engineers during the second half of the nineteenth century. It suffices to mention only a few Russians whose contributions were of a fundamental nature; namely, Jouravski (*Annales des Ponts et Chaussees,* 1856); H. Golovin (*Trans. Inst. Techn. St. Petersbourg,* 1881); F. S. Jasinsky (*Annales des Ponts et Chaussees,* 1894); N. Petroff (his book "Neue Theorie der Reibung" in German translation, Leipzig, 1887).

There are other inaccuracies and misstatements in the article under discussion, which in themselves are unimportant except that a consultant in the history of science is responsible for them. For instance, Nicolas and Daniel Bernoulli were brothers, both from Basel, Switzerland, and it is inconceivable why one of them is said to be from Switzerland and the other from Germany. Neither of them was a professor of mathematics, as this article says, before coming to the Academy of St. Petersburg. Nicolas occupied the chair of jurisprudence in Bern at the time he was called to St. Petersburg, while his younger brother Daniel, by profession a physician, did not hold any professorial position at all, either in Germany or in Switzerland, when he was called to the Academy. Leonhard Euler, pride of the Russian Academy, was not called to St. Petersburg until 1727 to fill the vacancy left by the untimely death of Nicolas Bernoulli. Chretien Goldbach, a quite insignificant mathematician, never was a member of the Academy of Sciences (refer to page 437).

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SCIENTIFIC BOOKS

FATTY ACIDS AND LIPIDS

The Biochemistry of the Fatty Acids, and their Compounds, the Lipids. By W. R. BLOOR. A.C.S. Monograph Series, 377 pp. New York: Reinhold Publishing Corporation. 1943.

THE author of this monograph has devoted the past thirty-five years to the study of the lipids. By virtue of both seniority in the field and the importance of his original contributions, he is recognized as the dean of lipid biochemists. He has systematically followed and