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A Statistical Study of the Effect of First Year Latin on English Vocabulary

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Loyola University Chicago

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A STATISTICAL STUDY OF THE EFFECT
OF FIRST YEAR LATIN ON
ENGLISH VOCABULARY

by


A Thesis Submitted in Partial Fulfillment of
the Requirements for the Degree of Master
of Arts in Loyola University
December
1942
VITA

Brother Leo Luke was born in Saint Louis, Missouri, June 5, 1916.

He was graduated from Christian Brothers College, Saint Louis, Missouri, June, 1934.

The Bachelor of Arts degree with a major in Latin was conferred by Saint Mary's College, Winona, Minnesota, in June, 1938.

From 1938 to 1941 the writer was engaged in teaching Latin and German at Saint George High School, Evanston, Illinois. In September, 1941, he was made assistant professor of Latin and German at Saint Mary's College, Winona, Minnesota. During the past year, he taught at Christian Brothers College, Memphis, Tennessee. He has written an article on Latin derivation: "Teaching Latin Derivation," The Latin Teacher, II, January, 1941.
CHAPTER I
SURVEY OF THE LITERATURE

The schoolboy has been asking himself, "Why should I study Latin?" Among the various responses to this question there will be found such answers as, "It will help your English," or "It will aid you in building up your English vocabulary."

The teacher of Latin may have asked himself, "Does the study of Latin increase the English vocabulary? Is my method of teaching Latin derivation effective? What are the most effective ways of increasing the student's knowledge of English words by the study of Latin?"

In order to answer the first of these questions correctly, there must be made a thorough investigation of the experiments and literature which relate to the benefits attained in English vocabulary by the study of Latin derivation.

"Contributing to the Classical Inquiry, perhaps the outstanding derivative studies are those of Hamblen and Haskell, both working for doctorates at the University of Pennsylvania."¹ A summary of these two outstanding investigations will

be given first, because they were conducted on a large scale and are described in great detail in two doctoral dissertations. These two experiments were also a part of the Classical Investigation of 1926, which drew up and tested a list of objectives for the teaching of Latin.

The purpose of the Hamblen investigation was to determine what methods and content in connection with the teaching of Latin are most effective in helping pupils to increase their knowledge of English words, especially those derived directly or indirectly from Latin. Students from four Philadelphia high schools participated in the experiment, which began with 154 pairs of students and finished with 118 pairs. The students were paired as closely as possible by using the results of the Terman Group Test of General Intelligence and the initial vocabulary tests. The Thorndike Test of Word Knowledge and the Carr English Vocabulary Test were used for the experiment. One form of each test was administered in September and other forms at the end of the first and second semesters. The Carr test comprises 50 words, half of which are of Latin origin and half of non-Latin origin. The control group was taught Latin without any lessons on Latin derivation. The experimental group spent one fifth of the regular class period on the study of Latin derivation, using a derivative notebook, derivative list, textbook aid, newspaper clippings and advertisements.
Gains made by the two groups on the Carr test:

<table>
<thead>
<tr>
<th></th>
<th>Latin words</th>
<th>Non-Latin words</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4.05</td>
<td>2.77</td>
<td>6.82</td>
</tr>
<tr>
<td>Experimental</td>
<td>8.12</td>
<td>3.49</td>
<td>11.61</td>
</tr>
<tr>
<td>Superior gain of experimental</td>
<td>4.07</td>
<td>0.72</td>
<td>4.79</td>
</tr>
</tbody>
</table>

The experimental group showed a gain of 70 per cent over the control group.

Gains made on the Thorndike Word test:

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>6.74</td>
</tr>
<tr>
<td>Experimental</td>
<td>10.66</td>
</tr>
<tr>
<td>Superior gain of experimental</td>
<td>3.92</td>
</tr>
</tbody>
</table>

The experimental group made a gain of 50 per cent on the Thorndike Word test, although less than 33 1/3 per cent of the words on the test were of Latin origin. A Latin comprehension test given to both groups at the end of the year showed that the experimental group was slightly superior in knowledge of Latin. In general, it was concluded that the gain in Latin-derived words may be increased two- three- or four-fold, depending on the textbook and teaching methods used.

To sum up, the results of this study seem to show that a pupil studying one year of Latin may be expected to make a small gain in a

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2A. A. Hamblen, *An Investigation to Determine the Extent to Which the Effect of the Study of Latin Upon a Knowledge of English Derivatives Can Be Increased by Conscious Adaptation of Content and Method to the Attainment of This Objective.* University of Pennsylvania, Philadelphia, 1925, 24.

3Ibid., 26.
knowledge of Latin-derived words, even without the help of textbook or teacher, although it cannot be stated to what extent this gain represents the normal growth in English vocabulary made by the average ninth grade pupil, and to what extent it is the result of automatic transfer; that this gain can be greatly increased through the use of a suitable text-book and of appropriate methods of teaching; that a pupil's notebook and a teacher's derivative list are important aids in the teaching of derivatives; that approximately one-fifth of the total class time may profitably be given to work in derivation; and that the giving of time and attention to derivation increases rather than hinders progress in ability to comprehend Latin.

R. I. Haskell collaborated with Hamblen on this same experiment. He began his work with 1800 students in four Philadelphia high schools and ended with 525 pupils. He divided the students into four groups: control English; experimental English; control Latin; and experimental Latin. The first group took the traditional course of English; the experimental English spent one-fifth of their English period studying etymology. The control Latin group studied Latin according to the traditional method without the study of Latin derivation; the experimental Latin spent one-fifth of their class period on Latin derivation. The Carr Vocabulary test and the Thorndike Test of Word Knowledge were used.

\[4\] Ibid., 51.
The general conclusions of Haskell are:

1. That the normal and conventional ninth-grade English course of study pursued by non-Latin pupils produces a very small contribution to the English vocabulary range of the pupil.

2. That by adding a course of English etymology, as previously described in this experiment and exhibited in the Appendix of this volume, to be pursued approximately one-fifth of the class period a very small increment in the range of English vocabulary results in addition to that found in (1). The difference probably does not make the introduction of English etymology worth while.

3. That the normal and conventional Beginners' Latin Course in the ninth grade produces with little if any derivative study, through automatic transfer, a small increment to the range of the pupil's English vocabulary, probably a little larger than that increment found in (2).

4. That the normal and conventional Beginners' Latin Course in the ninth grade produces with conscious effort in the study of etymology approximately one-fifth of the time of the class period a large and significant contribution to the range of the English vocabulary of the Latin pupil as determined by measurements with small groups in four Philadelphia high schools with the Thorndike and the Carr English vocabulary tests. In the light of this experiment and its limitations we recommend the Latin course plus the study of etymology as described in our experiment in order to make the objective of "contribution to range of English voca-
In 1921, W. L. Carr conducted an experiment to determine (1) to what extent the knowledge and training resulting from the study of Latin for one year appeared to aid in increasing the pupil's understanding of English words connected by derivation with Latin words presumably learned, and (2) whether such increase was automatic or resulted from specific training. The vocabulary test comprised fifty words, each used in a sentence; half the words were of Latin origin and half of non-Latin origin. The experiment was conducted in seven high schools with students taking Latin and those not taking Latin. The points in the following table represent the gains made from September to May. Two points were given for each word gained.

<table>
<thead>
<tr>
<th>School</th>
<th>No. of pupils</th>
<th>No. of Latin pupils</th>
<th>No. of non-Latin pupils</th>
<th>On Latin Words</th>
<th>On Non-Latin Words</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Latin Group</td>
<td>Non-Latin Group</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>112</td>
<td>60</td>
<td>52</td>
<td>16</td>
<td>5.5</td>
</tr>
<tr>
<td>B</td>
<td>258</td>
<td>155</td>
<td>103</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>183</td>
<td>33</td>
<td>150</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>49</td>
<td>30</td>
<td>19</td>
<td>14.5</td>
<td>6</td>
</tr>
<tr>
<td>E</td>
<td>193</td>
<td>71</td>
<td>122</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>F</td>
<td>38</td>
<td>8</td>
<td>30</td>
<td>11.5</td>
<td>5</td>
</tr>
<tr>
<td>G</td>
<td>93</td>
<td>15</td>
<td>78</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>


The preceding table shows that on words of Latin origin, the Latin group gains two or three times as many words as the other group.

Clearly therefore not initial ability in English vocabulary but the direct or indirect training received in connection with their study of Latin is responsible for the larger growth in English vocabulary made by the Latin pupils in all the schools included in the investigation.\(^ 7\)

In reference to the second purpose of the investigation, which was to determine whether such increase was automatic or resulted from specific training, Carr states:

> The evidence on this point therefore, while not conclusive, seems to indicate that transfer of training received in the study of Latin to the field of English vocabulary depends largely upon definite instruction and training in the technique of derivation.\(^ 8\)

Recently, in the March 1942 issue of the *Classical Journal*, W. L. Carr interpreted some data gathered from tests given in 1922.

> The tests to which I have just referred were run in connection with the Classical Investigation and certain data from them were used by Thorndike and Kiger in the study which they made and published at that time. The complete data have never been published. The superior median gains of Latin pupils over

\(^{7}\text{Ibid.}, 198.\)
\(^{8}\text{Ibid.}, 198.\)
non-Latin pupils are very significant, but, to me, data from some of the individual items in the tests are equally significant and far more interesting. I should like to present some data from Form C in that test, which was run in June, 1922, with over 8,000 ninth-grade pupils in 59 different schools. These particular data are taken from an equal number of samplings from ten different schools in nine different states, half of the papers from each school having been written by ninth-grade pupils who were just completing their first year of Latin and the other half of the papers having been written by ninth-grade pupils in the same schools who had not had any Latin. 9

In this article, Carr publishes the results of a hundred pupils of each of the groups. Form C of the Carr Test has 25 words derived from Latin. The number of correct responses for each of the 25 items is given so that the ability of the two groups can be compared. This recent interpretation is one of the few that has been made on the various data gathered from these experiments. The results are very favorable to the Latin students.

As to the average superiority of one-year Latin pupils over non-Latin pupils the results of this test leave no doubt. The average of correct responses to these twenty-five Latin-derived words is 64 per cent for Latin pupils, and 22 per cent for non-Latin pupils, an average advantage of

almost three to one, or a difference of 42 points on a 100-point scale, whereas the difference in favor of the Latin pupils on non-Latin words is only 11 on a 100-point scale (45-34).

J. B. Carroll conducted an investigation in 1940, which disagreed with the findings of the preceding experiments. "It is probable that the discrepancies in the results of these studies are to some extent due to differences in the amount and kind of specific training in derivation given in the Latin classes involved." Another criticism can be made against the validity of the results due to the small number of students in the experiment. The comparison was between 33 students who did not take Latin and 37 who had two years or less, plus 6 who had between two and four years of Latin. The experiment dealt with the effect of Latin study on morpheme knowledge and on vocabulary. Morphemes may be defined in linguistics as the smallest meaningful phonetic units in language. The conclusion drawn from this investigation is as follows:

Concerning the effect of Latin study on morpheme knowledge and on vocabulary, we have the paradoxical situation that whereas Latin definitely influences the ability to recognize morphemes and the knowledge of their meanings, it has no necessary effect on English vocabu-

10Ibid., 349.
lary. This is true in spite of the fact that morpheme recognition ability is partly related to vocabulary. The interpretation seems to follow that the teaching of word derivation per se in Latin classes does not aid in enlarging English vocabularies unless, possibly, specific attention is directed toward words not already known or used by the students. Word derivation as commonly taught in first and second year Latin classes is often directed largely to the commoner words which are derived from Latin; the teacher seems to be content to impress the student with the high percentage of English words which have come down from the classical languages. Instruction should be extended to cover those less common words which are nevertheless of importance in conveying fine distinctions of meaning. It is quite possible, besides, that derivation taught in Latin classes, supported by a more thorough knowledge of Latin than would be obtainable otherwise, would be a more adequate basis for enlarging English vocabularies than a mere smattering of assorted roots and affixes even well taught in English classes. Knowledge of word derivation as a mnemonic device has often aided the writer in retaining the meanings of unusual words.\textsuperscript{12}

\textsuperscript{12}Ibid., 109-110.

H. A. Douglass and C. Kittelson administered a vocabulary test of 38 multiple-choice items, 19 of Latin origin and 19 of non-Latin origin, both to pupils who had studied two years of Latin and to those who had not studied Latin. No attempt was made to stress derivation in the Latin classes. "General Con-
Conclusions: (1) Pupils who have had two years of Latin are likely to do slightly better in spelling, vocabulary, and grammar tests than pupils of similar natural general ability or intelligence who have not studied Latin."  

In 1922, A. R. Gilliland gave a vocabulary test to 115 college freshmen having no Latin to five years of Latin. The test comprised forty words, ten of Anglo-Saxon origin, ten of Greek origin and twenty of Latin origin. The results of the experiment may be summed up.

Graph I. shows the increase in ability to define English words of Anglo-Saxon, Latin and Greek origin dependent upon the number of years spent in the study of Latin. Not only were those who had studied more Latin able to define more words of Latin origin but they were also able to define more words of Anglo-Saxon and Greek origin appreciably better. One or the other or probably both of two factors account for this. Either the men who had studied Latin for a longer time had a greater native capacity for language, or at least for Latin, or the study of Latin developed a method of attack which helped in defining any type of word.  

It was thought that a study of French and German might improve the ability of the student to define the given list of words. In order to discover any important effect of these languages, the scores of the students in each of the three

13 H. R. Douglass and C. Kittelson, 32.
largest groups - those with no Latin, those with 2 years and those with 5 years of Latin - were each arranged on the basis of the years of French the subject had taken. They were also arranged again on the basis of the years of German the subject had taken. While this method of determining the effects of the study of these languages is not conclusive proof the results tend to show that they do not improve ability to define words appreciably more than the study of other subjects of the curriculum.15

In 1920, W. J. Grinstead published an article in the Classical Journal describing the conclusions he reached from his experiment a few years previous.

It is universally claimed that one of the foremost educational values of Latin is its contribution of a stock of word ideas that function in the ready comprehension and accurate use of the majority of thought-words in English. Psychologists have proved, however, by experiment that the amount of transfer of training in any activity to a related activity depends in a measure upon the extent to which the teacher perceived the relation and strove in the training to make the pupil perceive it.

Both these positions were verified in experiments conducted by the writer in the University of Wisconsin in 1915-16. University Freshmen with four years of Latin were considerably better than those with two years, and twice as good as those with no Latin, in defining both familiar and unfamiliar words.

of Latin origin. But high-school Juniors and Seniors, with one year of Latin, taught with specific and primary attention to word formation, were slightly better in the same tests than university Freshmen with four years of high-school Latin of the traditional type. The conclusions are (1) high-school Latin contributes materially to knowledge of English words; (2) the contribution is materially increased, and more economically secured, if the teacher keeps in mind and emphasizes the Latin methods of word formation and the Latin words and word elements (prefixes and suffixes) which have most enriched English.  

In January 1941, R. B. Mackman and H. W. Duel reported an experiment on college students. The number of students in the whole experiment was 346, of which number 154 took English without a foreign language, while 85 studied French, 26 German, 37 Latin and 44 Spanish. These groups were then equated by mental ability ratings plus studiousness, socio-economic status, out-of-school employment, participation in extracurricular activities and various personality traits. One conclusion of their experiment is "5. The study of a foreign language in high school appears to have no bearing on gains in Vocabulary or Spelling." A very evident criticism is

that the students who studied Latin comprised only 10 per cent of the group. A second criticism is that the wide experiences of these students in other courses would tend to level out any distinction in vocabulary achieved in the foreign language course.

Jacob Orleans endeavored to determine the possible transfer value of the study of Latin to English vocabulary by presenting to ten competent judges 2,000 words selected from the Thorndike Word list along with the Latin words from which these words were derived. The judges were to rate the possibility of transfer on a scale of 0 to 10. The average judgment was a 4, 3, or 2. No interpretation of results was given because it was evident that this method was too subjective.

In 1922, A. T. Otis published an article in the School Review in which he showed the relation of Latin study to ability in English vocabulary. Fifty pupils with two years of Latin were paired with fifty non-Latin pupils. The test was made up of fifty Latin derived words. The results show that the Latin pupils averaged 16.2 words while the non-Latin pupils averaged 12.2 words. Thus the Latin group was 33 per cent superior to the non-Latin group on Latin derived words.

Surely it proves that given two pupils of equal intelligence, working under like conditions of educational opportunity, the one who studies Latin for two years will at the end of that time have a passive English vocabulary 33 per cent
larger on its Latin-derived side than his fellow who did not study Latin. And inasmuch as the Latin element in English is at least 60 per cent of the whole, that means that he knows 18% more English words than his fellow.18

An early experiment by A. S. Perkins is described in the Classical Journal of 1914. A small group of 21 students was paired with the same number having an equal English ability. The results on a vocabulary test were 36 per cent for the Latin group and 6.8 per cent for the non-Latin group.

The wide difference in the results, from the viewpoint of excellence in vocabulary - 36.0 per cent and 6.8 per cent - shows clearly what I have always believed and maintained, namely, that the work in commercial Latin necessarily gives the pupils the dictionary habit, the results of which extend far beyond the Latin derivatives actually studied.19

In 1938, F. L. Pond administered the Survey Test of Vocabulary Form Z to 208 pupils in grades 9 to 12. The test included 100 items, 73 of which were of Latin derivation. Of the 208 students, 79 were Latin students and 129 were not. The results of the test showed a slight superiority for the Latin group.

Conclusion 1. There was a positive biserial correlation between

the vocabulary scores of members of the random group of 208 pupils and the fact that they had studied Latin. Further examination shows, however, that the group which had had experience with the study of Latin was superior in general intelligence to the group which had not enjoyed that linguistic experience.20

In the October 1939 issue of College English, Sister Rose Anthony tells how Latin aids the college student to interpret English literature.

I began my investigation in my 1937-38 English literature classes, and continued it during the past winter. At first I gave fifty students tests from time to time: these tests consisted of quotations from various authors studied, and in these quotations uncommon words of Latin derivation were underlined. The student was asked either to define the word or to select one of four given definitions which she believed most appropriate for the word in question. The results were examined and tabulated; they showed convincingly that the students of Latin were, pretty generally, much better able to grasp the meaning of derivatives than those who knew no Latin.21

Those students having two years of Latin were 25 per cent better than those having no Latin and those with four years of Latin were 45 per cent better than those with no Latin.

21Sister Rose Anthony, "Latin as an Aid in Interpreting English Literature," College English, I, October, 1939, 75.
In December 1915, V. N. Starch published some experimental data on the vocabulary of university and high school students. He found that the size of English vocabulary of 139 university students who had studied Latin was 60.9, while that of 50 university students who had not studied Latin was 58.2. He likewise found the size of English vocabulary of 14 high school Juniors who had studied Latin was 54.7, while that of 32 high school Juniors who had not studied Latin was 50.2.

The differences between the Latin and the no-Latin groups are surprisingly small. . . Nevertheless the study of Latin does produce an appreciably larger English vocabulary. This advantage becomes less in university students, with whom it is partly counter-balanced by the increase in vocabulary due to wider experience. 22

P. M. Symonds and E. M. Fenney conducted an experiment in 1926. The control and experimental groups each consisted of 15 girls. The control group took the usual English course, while the experimental group spent five to fifteen minutes of the English period on word study. A test of 750 words was given to each group with the following result. "At the end of four months of instruction, the score of the practice group had increased 6.9 words per hundred, whereas that of the

control group had increased but 2.2 words per hundred." 23

The gain of the experimental group was greater than the gain made by a group that had studied Latin for two years in an earlier experiment conducted by Thorndike; and also greater than the gain made in a semester by certain Latin classes which received special instruction on derivatives during the Latin period, in a Philadelphia experiment. 24

This experiment would seem to prove that the study of etymology in the English class is more effective than derivative work in the Latin class. However, it must be observed that in this experiment all of the students except three were taking Latin. In addition, one assignment of the experimental group dealt with Latin root words, a fact which would be of very great assistance as it would serve to connect the student's knowledge of Latin words with her work in English vocabulary.

In 1921 and 1922, E. L. Thorndike conducted an investigation to determine the influence of first year Latin upon range in English vocabulary. Three forms of the Thorndike Test of Word Knowledge were given to 2,300 in 56 high schools. The following table shows the results of the investigation.

24 *Ibid.,* 100.
TABLE
Gain in Knowledge of English Words.25

<table>
<thead>
<tr>
<th></th>
<th>Latins</th>
<th>Non-Latins</th>
<th>Superiority of Latins</th>
<th>Weighted Superiority of Latins</th>
</tr>
</thead>
<tbody>
<tr>
<td>After 2 years</td>
<td>5.2</td>
<td>5.8</td>
<td>-.60</td>
<td>.25</td>
</tr>
<tr>
<td>After 1 year</td>
<td>3.5</td>
<td>3.4</td>
<td>.10</td>
<td>.82</td>
</tr>
<tr>
<td>(2 yr. group)</td>
<td>3.78</td>
<td>3.04</td>
<td>.74</td>
<td>.76</td>
</tr>
<tr>
<td>After ½ year</td>
<td>1.8</td>
<td>1.4</td>
<td>.40</td>
<td>.26</td>
</tr>
<tr>
<td>(2 yr. group)</td>
<td>1.33</td>
<td>1.39</td>
<td>-.06</td>
<td>.02</td>
</tr>
</tbody>
</table>

The last column represents the corrected weighted average gain, when initially equal groups are compared. From these results, it is concluded that the Latin group gains almost one and a half times the gain which the non-Latin group of equal initial scores makes.

Another investigation was conducted by Thorndike and Huger during the same school term. Three forms of the Carr English Vocabulary Test were given to ninth grade pupils in 41 schools in 18 states. There were 2,575 pupils studying first year Latin, and 2,944 pupils not studying Latin. On words of Latin origin, the Latin group showed a weighted average superior gain of 4.03 and on words of non-Latin origin a weighted average superior gain of .4. Therefore it was concluded:

In the words of Latin derivation the Latin pupils gain in the year about 2 1/2 or 2 2/3 times as

many words as the non-Latins. In the words not of Latin derivation there is no demonstrable difference between the pupils who studied Latin and those who did not."26

CHAPTER II
DESCRIPTION OF THE PRESENT EXPERIMENT

The survey of the literature and experiments on the teaching of Latin derivation, as made in chapter one, shows that the study of Latin does increase the English vocabulary. This fact is especially true, when a conscious effort is made by the teacher of Latin to attain this objective. From the facts presented by these various experiments, it is known that Latin students taught Latin derivation with special aids will increase their English vocabulary on words derived from Latin. Thus the question, "Does the study of Latin increase the English vocabulary?" has been satisfactorily answered by the data of several outstanding experiments.

As stated at the beginning of chapter one, the teacher of Latin may next ask himself, "Is my method of teaching Latin derivation effective?" or "What are the most effective ways of increasing the student's knowledge of English words by the study of Latin?"

The purpose of this present experiment is to answer the two preceding questions. In other words, the present study intends to analyze the nature of the extent to which a knowledge of English words can be increased by using a certain
method of teaching Latin derivation, by taking into consideration the word-origin of the words used in the vocabulary tests administered to a group at the beginning and end of a school year.

The comparison will be made between the initial and final vocabulary tests. These tests have been analyzed, according to the origin of the words, into three sections: words of non-Latin origin; words of Latin origin not derived from first year Latin vocabulary; and words of Latin origin derived from first year Latin vocabulary. This analysis of the 360 words included in the Cooperative English Vocabulary Test and the Inglis Test of English Vocabulary will be presented in chapter four.

This experiment does not intend to show the superiority of Latin students over non-Latin students in English vocabulary; nor even, the superiority of Latin students, taught with special assistance in Latin derivation, over Latin students not so taught. For such an experiment, a control group would be absolutely necessary. Moreover, the findings of several authorities on the teaching of Latin derivation are in such close agreement, that there is no immediate need to substantiate their conclusions.

In order to analyze this growth in English vocabulary, a series of tests were given at the beginning and end of the school year. First, the Terman Group Test of Mental Ability
was given. Then the Cooperative Vocabulary Test Form Q and the Inglis Test of English Vocabulary Form A were given before the end of September, 1940.

During the school year, the special aids, which will be described in chapter three, were used for the teaching of Latin derivation.

At the end of the school year, the same two English vocabulary tests were again administered. The same forms of the tests had to be used so that the results would be comparable as the word-origin of the vocabulary words played an essential part in the experiment. The interim of eight months was thought to be sufficient to do away with any memory retention as no answers were given to the students after the initial tests. In addition, the Cooperative Latin Test Elementary Form Q was given to all the students.

The experiment started with ninety-five students, but complete data were secured for only eighty-six students due to the usual withdrawals, changes of schedules, etc. These eighty-six students were all in the ninth grade at St. George High School, Evanston, Illinois. They were separated into three classes, each having approximately the same I. Q. average. These three classes were taught first year Latin by the author during the school term September 1940 to May 1941.

Latin was not an elective for this group. All students, having an I. Q. of a hundred or over, are required to take
Latin and those, having an I. Q. less than a hundred, may take Latin by special request. There were only five of the latter type.
CHAPTER III

METHOD OF TEACHING LATIN DERIVATION

In several experiments, which have been described in chapter one, a definite method of teaching Latin derivation was supposed to be followed by the different Latin teachers participating in the experiment. In some cases, the experimenter was not always able to control the classroom situation in regard to the importance placed on Latin derivation.

In the present experiment, however, the method as described was strictly followed. The special aids used to stress Latin derivation were: the textbook; the teacher's derivative list; the pupils' derivative notebook; the amount of class-time allowed; and the Latin scrapbook.

The textbook used was Latin Book One by H. F. Scott and A. Horn. It contains four lessons on word study. The lesson on page 82 treats of the typical changes in spelling and word families. The lessons on pages 126 and 244 treat of the uses of prefixes and suffixes respectively. The final word study on page 330 deals with words ending in -ant and -ent. In addition, each lesson contains a small section entitled, "English derivatives" having four or five English words taken from the Latin vocabulary. Lesson IXI on page 224 serves as
a typical illustration of the help in Latin derivation given by the textbook.

B. English Derivatives:
1. What is an auditorium?
2. Give an English adjective which is derived from audio.
3. What are munitions?
4. What is a pedestal? Give another word from pes.
5. What is the original meaning of science?
6. What is a sonorous voice?
Look up the pronunciation.1

The assistance given by the textbook was supplemented by the teacher's derivative list. In the textbook by Scott and Horn, there are about seven hundred Latin vocabulary words; five hundred of which were found to have English derivatives. A list of approximately nineteen hundred English words derived from these Latin words was compiled. Care was taken in the preparation of this derivative list to include familiar and unfamiliar derivatives; however, obsolete words were omitted. This list is presented in Appendix I.

Each pupil had a small notebook, four inches by six inches, in which he copied the derivatives from the blackboard. These notebooks served as a means of vocabulary building as the English derivatives were always included in the daily assignment. The derivative notebooks were collected periodically and graded on their completeness and also on

1H. F. Scott and A. Horn, Latin Book One, Scott, Foresman and Co. Chicago, 1936, 224.
their neatness. At the end of the year each student's notebook was a duplicate of the derivative list as presented in Appendix I.

In previous experiments on the teaching of Latin derivation, the amount of class time spent on derivatives seemed to have a very important effect on the results of the investigation. It was recommended that approximately one-fifth of each class period be spent on English derivatives.

In the present experiment, the class period lasted fifty-five minutes. Each day, about ten to twelve minutes were spent copying and explaining the list of derivatives of the lesson being studied.

Either in the morning before class or during the daily five minute quiz, the derivatives of the next lesson would be written on the board. The class usually spent about six or seven minutes copying the English derivatives in their notebook.

The following is a sample as it would be written on the blackboard. The derivatives from lesson sixty-one are presented.

LXI

audio, -ire, -ivi, -itum.
auditorium, audible, audition, audience, inaudible, obedient.

legatus, -i, M.
legate, legation, delegate.
munio, -ire, -ivi, -itum. munitions, ammunition.

pes, pedis, M. impede, pedestal, impediment, pedestrian, quadruped, pedal, centipede, expedition.

scio, scire, scivi, scitum. science, omniscient, scientific, conscious, conscience.

sonus, -i, M. sonorous, sound, resound, consonant, sonnet, impersonate.

tenebrae, -arum, F. pl. tenebrae, tenebrous.

venio, -ire, veni, ventum. convention, advent, convene, event, inventor, prevent, revenue, intervene, convent, convenience, adventure, avenue.

By referring to the sample derivatives just presented, it can be observed that the familiar words were given first, while the unfamiliar words or those indirectly derived from that Latin word were placed at the end. This arrangement has a two-fold advantage. Firstly, it enables the student to connect the Latin word with some simple English words that he already knows; secondly, it permits the student to deduce the meaning of some unfamiliar English words, which may be added to his vocabulary.

When the class had finished writing the derivatives, the homework of the preceding day, which usually consisted of ten or twelve Latin sentences, was corrected. Following this, the grammar of the new lesson was explained. After the class translated by sight reading the reading exercise of the new
lesson, the Latin vocabulary of the new lesson was read. It was at this point in the lesson plan that about five or ten minutes were spent on explaining the derivatives of each lesson. The explanation was usually introduced in the form of questions in order to keep the interest of the class at a high pitch. Such questions were asked as, "What is an auditorium? What has that to do with the word 'hear'? What is meant by audible? What would you understand by an audition? If it were said that the answer was inaudible, what would be meant?" Sometimes, three or four students would give definitions before a sufficiently accurate one was received. The words were defined by the teacher only when there was no one in the class able to give an accurate definition. Most students learned the meanings of the common prefixes and suffixes merely by their constant repetition in lesson after lesson. Then there were some words whose meaning was simple, but whose derivation from the Latin word had to be clarified. An example of this, would be the word 'obedient' from the Latin, audio. Occasionally, some picturesque words occurred as 'arrive' from ad and ripa, 'alarm' from ad arma, and 'sincere' from sine and cera; their stories were told to the great interest of the class. The daily explanation of the derivatives by the members of the class was usually a very interesting part of the lesson.
The daily assignment included a study of the derivatives along with the Latin vocabulary words. The advantage of combining the two was to aid the study of Latin vocabulary. Firstly, the student can more easily remember the meaning of the Latin word, if he associates it with a familiar English word. Secondly, the student can recall the Latin word, when given the English, by having already associated the Latin word to its derivative.

Each day the students were tested on their knowledge of the derivatives studied in the previous lesson. These questions, however, were not directly about the meaning of the derivatives, but rather tested the association the student had between an English word and the Latin word whence it was derived. The questions usually took the form, "From what Latin word is the word 'audible' derived?" One or two questions of this type were asked in a daily written test. The majority of the students were able to answer questions like this correctly.

About every two or three weeks, a Latin Progress test by Scott and Horn was given to the group. Part one of these tests is entitled English Derivatives and Vocabulary. Its purpose is to test the student's knowledge of Latin vocabulary by his recognition of English derivatives. The following sample is taken from Progress Test IV.
SAMPLE: The carpenter built a portable garage. ________ porta ________ carry

1. The soap packages contained

premiums. ________ ________

There are usually ten sentences just like the above. The student was required to place the Latin word, praemium, on the first blank, and its meaning, reward, on the second blank. The classes averaged about 90 per cent on this particular section of the test. About twelve of these Progress tests were administered during the course of the school year.

During the second semester, the students were encouraged to organize a Latin scrapbook. The major section of this scrapbook was about derivatives. The students were told to take about fifteen to eighteen lessons from their derivative notebook and find as many derivatives in print as they were able. These derivatives usually were found in newspapers, magazines and advertisements. They were clipped out and pasted on a plain piece of 8 by 11½ paper. For example, the student clipped out an advertisement about dental cream. After he pasted the advertisement on a page of his notebook, he wrote 'dens - tooth' underneath the clipping. About four or five derivatives were arranged on a page; the amount varied

with the size of the clippings. The Latin scrapbook was not made compulsory, but about twenty per cent of each student's final grade was based on the work of his Latin scrapbook. The book was collected six times during the second semester and each time the derivatives on a section of fifteen to eighteen lessons were corrected. The average student had about five pages of derivatives each of the six times. Some students had a total of fifty to sixty pages for their complete work. About eighty per cent of the students turned in Latin scrapbooks and between sixty and seventy per cent of the work was satisfactorily done.
CHAPTER IV

WORD ANALYSIS OF THE ENGLISH VOCABULARY TESTS

As mentioned previously, the Cooperative Vocabulary Test Form Q and the Inglis Test of English Vocabulary Form A were used in the experiment.

The Cooperative Vocabulary Test consists of 210 five-choice items; thirty items on a page and seven pages in the booklet. All the words were selected from the Thorndike Word lists. The test is suitable for students in grades seven through twelve. The following is a sample item.

callous  
1. hardened  
2. difficult  
3. noisy  
4. sensitive  
5. wicked

Each of the 210 items was classified by the author using Webster's Unabridged Dictionary as the authority for the word-origin of the items. From the analysis it was found that one hundred and eight words were of non-Latin origin; fifty-seven were of Latin origin, but not derived from any of the seven hundred Latin vocabulary words in Scott and Horn's Latin Book One; forty-five words were derived from some form of the Latin words as found in that book and these same forty-five
words were included in the list of derivatives studied in the course of the year. In each of the three classifications, the words will appear in the same order as they do in the test.

Words of Non-Latin Origin

flaw thoroughfare
hapless rapier
chagrin unfurl
quell caustic
amalgamation billiards
beget hankering
diplomatic crone
topaz belle
swirl thesis
spigot mandarin
bailiff parasitical
deft simmer
deroglyph spaniel
bash andiron
cavalryman ribald
chortle booklet
treens cleaver
stampedede atone
artichoke encyclical
ashen underworld
barracks slop
ruble nestle
riterion cataclysm
hurdle scorpion
changeable align
keg checkmate
pelican jostle
askance thews
contryfied elite
wardle churl
chameleol garret
acme libretto
weevil burdock
talisman cello
antelope turquoise
entombment
## Words of Latin Origin Not Derived from First Year Latin

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<td>tense</td>
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<td>protuberant</td>
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<td>exhortation</td>
<td>estuary</td>
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## Words Derived from First Year Latin

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<td>albatross</td>
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</table>
The Inglis Test of English Vocabulary consists of 150 items used in sentences or expressions. The test has norms for students from the ninth grade to college graduates. The following sample is taken from the test:

On the beach (1) bay (2) harbor (3) shore (4) tide (5) ocean 3

This test was analyzed in the same manner as the previous test and was found to contain sixty-four words of non-Latin origin; fifty-nine words of Latin origin, but not derived from words in the first year Latin vocabulary; and twenty-seven words derived from the first year Latin vocabulary.

Words of Non-Latin Origin

- abandon
- alay
- antithesis
- appraised
- arrogance
- atypical
- autonomous
- baffled
- beseeches
- bleak
- booty
- braved
- buxom
- catalogue
- chastisement
- coy
- cumbersome
- dastard
- democracy
- disdainful
- doused
- exchequer
- fantastic
- flitch
- fretful
- gander
- girded
- gross
- hamlet
- heterogeneous
- howbeit
- inveigled
- jaunty
- kin
- largesse
- loathed
- menace
- monograph
- ostracized
- paragon
- peasants
- pinnacle
- pledged
- polyglot
- quail
- razed
- ruddy
- samovar
- schemes
- seethes
- severed
- shuffled
- skittish
- stilted
- straggled
- stress
- sullies
- synchronous
- thriftily
- titanic
- twiddled
- unbridled
- uttered
- vantage
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<th>Words Derived from First Year Latin</th>
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<td>magnanimity</td>
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CHAPTER V

COMPARISON OF THE TEST RESULTS

All the standardized tests used in the present experiment were administered by the author. Care was taken that the directions of the tests were followed closely. The time limit of thirty minutes, suggested for the Cooperative English Vocabulary Test, was observed both in the initial and final administrations of the test. No exact time limit is given for the Inglis Test of English Vocabulary, so thirty-five minutes were allowed at each of the administrations.

The tests were corrected according to the answers given on the answer sheets. Each test was graded twice to catch any possible error made in the corrections. The tabulation of the correct words was rechecked to eliminate any error in counting. An important observation is that the scaled score on the Cooperative Test is based on the number of right answers minus one-fourth of the wrong answers, on only the number of pages completed by the student.

According to the word analysis presented in chapter four, the words were classified into three divisions. The number of correct words belonging to each of the three types had to be counted. In this arduous task, there was a possibility of
of making errors in the tabulations; but the number right of each type, when added, had to correspond to the total number right. In any case when these figures did not agree, the words were recounted until the results checked with each other.

Table I gives the results on the Cooperative English Vocabulary Test for group one. The first column on the left represents the thirty-one different pupils in that class. The numbers under Roman numeral one are the number of correct words of non-Latin origin. Those under Roman numeral two are the number of correct words derived from Latin, but not derived from first year Latin. Those under Roman numeral three are the number of correct words derived from the first year Latin vocabulary. The next column, T, gives the total number of correct words on the test, or a summation of the three previous columns. The numbers in the first four columns represent the words correct on the whole test regardless of the number of completed pages. The column, headed SS, is the scaled score computed from the number right on completed pages only. The percentile for the September results was computed from the end-of-year norms in terms of scaled scores of the eighth grade. The next six columns present the results of the test when administered in May. The percentile in this section was computed from the end-of-year norms of the ninth grade. The columns under gains represent the number of words gained
of each type, the total number of words gained and the gain in the scaled score. The mean of each column was computed so that the respective gains may be compared.

Tables II and III present the results on the Cooperative English Vocabulary Test for groups two and three respectively.

Table IV gives the results on the Inglis Test of English Vocabulary for group one. The Roman numerals have the same significance as on the previous tables. Neither scale scores nor percentiles are supplied for this test.

Tables V and VI show the results on the Inglis Test of English Vocabulary for groups two and three respectively.

Table VII presents in concise form the gains as computed from tables I to III. The average word gain was computed on the fact that two groups have thirty-one students, while the third has twenty-four. Thus, the average word gain is per student rather than per group.

Table VIII summarizes the gains on the Inglis test as computed from tables IV to VI.

Table IX gives the various data indirectly related to the present study. Five columns of data are presented about each of the three classes of students. Column 'a' shows the per cent of gain in words derived from first year Latin vocabulary. This per cent was computed by dividing the gain in words derived from first year Latin by forty-five minus the initial score of the same type. This column was based only
on the results of the Cooperative English Vocabulary Test. Column 'b' gives the I. Q. of each student based on the Ter-
man Group Test of Mental Ability. Column 'c' represents the rating computed from the grades received on the student's Latin Scrapbook. The grades were given periodically during the second semester and the results of the vocabulary tests had no bearing on these ratings. Column 'd' gives the rating, one to ten, made by the author on the student's interest as shown during the ten or twelve minutes spent in class on the study and explanation of derivatives. The highest rating was ten and the lowest, one; each class averaged between five and six on this scale. Although this rating was subjective, it was made without reference to the results of the vocabulary tests. Column 'e' is the scaled score of the Latin Cooperative Test Form Q.
**TABLE I**

RESULTS ON THE COOPERATIVE ENGLISH VOCABULARY TEST FOR GROUP I

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<th>May Results</th>
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Mean of I: 46.74  | Mean of II: 18.19  | Mean of III: 15.64  | Mean of Total: 80.58  | Mean of SS: 44.29  

*May - Non-Latin; II - Latin, not first year; III - Latin, first year; T - Total of the three; SS - Scaled Score; %ile - Percentile.*
<table>
<thead>
<tr>
<th>Sept. Results</th>
<th>May Results</th>
<th>Gains</th>
</tr>
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<tbody>
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<td>I II III T SS</td>
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*I - Non-Latin; II - Latin, not first year; III - Latin, first year; T - Total of the three; SS - Scaled Score; %ile - Percentile.
TABLE III

RESULTS ON THE COOPERATIVE ENGLISH VOCABULARY TEST FOR GROUP III

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*I - Non-Latin; II - Latin, not first year; III - Latin, first year; T - Total of the three; SS - Scaled Score; %ile - Percentile.
## TABLE IV

RESULTS ON THE INGLIS TEST OF ENGLISH VOCABULARY FOR GROUP I

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*I - Non-Latin; II - Latin, not first year; III - Latin, first year.
### TABLE V

RESULTS ON THE INGLIS TEST OF ENGLISH VOCABULARY FOR GROUP II

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| Mean of I | 25.77 | 28.77 | 3.00 |
| Mean of II | 19.80 | 22.45 | 2.64 |
| Mean of III | 9.64 | 12.12 | 2.48 |
| Mean of Total | 55.22 | 63.35 | 8.12 |

*I - Non-Latin; II - Latin, not first year; III - Latin, first year.
TABLE VI

RESULTS ON THE INGLIS TEST OF ENGLISH VOCABULARY FOR GROUP III

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Mean of I 28.58 31.50 2.91
Mean of II 20.95 22.00 1.04
Mean of III 10.08 12.37 2.79
Mean of Total 59.62 66.37 6.75

*I - Non-Latin; II - Latin, not first year; III - Latin, first year.
### TABLE VII

**AVERAGE GAINS ON THE COOPERATIVE ENGLISH VOCABULARY TEST**

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<td>5.43</td>
<td>3.19</td>
<td>4.43</td>
<td>13.07</td>
<td>4.02</td>
</tr>
</tbody>
</table>

*I - Non-Latin; II - Latin, not first year; III - Latin, first year; SS* - Scaled Score.

### TABLE VIII

**AVERAGE GAINS ON THE INGLIS TEST OF ENGLISH VOCABULARY**

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group I</td>
<td>2.35</td>
<td>3.00</td>
<td>2.93</td>
<td>8.29</td>
</tr>
<tr>
<td>Group II</td>
<td>3.00</td>
<td>2.64</td>
<td>2.48</td>
<td>8.12</td>
</tr>
<tr>
<td>Group III</td>
<td>2.91</td>
<td>1.04</td>
<td>2.79</td>
<td>6.75</td>
</tr>
<tr>
<td>Average Word Gain</td>
<td>2.74</td>
<td>2.33</td>
<td>2.72</td>
<td>7.79</td>
</tr>
</tbody>
</table>
TABLE IX
VARIABLES DATA RELATED TO THE STUDY

<table>
<thead>
<tr>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>d</td>
<td>1. 35 122</td>
<td>1. 9 126</td>
</tr>
<tr>
<td>e*</td>
<td>1 8 52</td>
<td>7 4 47</td>
</tr>
<tr>
<td>2. 0 109</td>
<td>2. 19 84</td>
<td></td>
</tr>
<tr>
<td>3. 8 118</td>
<td>3. 9 115</td>
<td></td>
</tr>
<tr>
<td>4. 33 117</td>
<td>4. 5 138</td>
<td></td>
</tr>
<tr>
<td>5. 32 126</td>
<td>5. 45 122</td>
<td></td>
</tr>
<tr>
<td>6. 26 119</td>
<td>6. 3 120</td>
<td></td>
</tr>
<tr>
<td>7. 12 109</td>
<td>7. 27 115</td>
<td></td>
</tr>
<tr>
<td>8. 38 115</td>
<td>8. 3 107</td>
<td></td>
</tr>
<tr>
<td>9. 17 106</td>
<td>9. 0 128</td>
<td></td>
</tr>
<tr>
<td>10. 7 114</td>
<td>10. 3 107</td>
<td></td>
</tr>
<tr>
<td>11. 0 111</td>
<td>11. 3 106</td>
<td></td>
</tr>
<tr>
<td>12. 21 110</td>
<td>12. 35 110</td>
<td></td>
</tr>
<tr>
<td>13. 12 114</td>
<td>13. 5 98</td>
<td></td>
</tr>
<tr>
<td>14. 0 131</td>
<td>14. 22 119</td>
<td></td>
</tr>
<tr>
<td>15. 21 105</td>
<td>15. 0 80</td>
<td></td>
</tr>
<tr>
<td>16. 18 108</td>
<td>16. 13 119</td>
<td></td>
</tr>
<tr>
<td>17. 25 120</td>
<td>17. 0 106</td>
<td></td>
</tr>
<tr>
<td>18. 14 118</td>
<td>18. 10 102</td>
<td></td>
</tr>
<tr>
<td>19. 27 134</td>
<td>19. 3 111</td>
<td></td>
</tr>
<tr>
<td>20. 10 100</td>
<td>20. 10 100</td>
<td></td>
</tr>
<tr>
<td>21. 13 120</td>
<td>21. 26 134</td>
<td></td>
</tr>
<tr>
<td>22. 8 104</td>
<td>22. 0 113</td>
<td></td>
</tr>
<tr>
<td>23. 20 112</td>
<td>23. 0 109</td>
<td></td>
</tr>
<tr>
<td>24. 27 101</td>
<td>24. 37 104</td>
<td></td>
</tr>
<tr>
<td>25. 0 85</td>
<td>25. 10 114</td>
<td></td>
</tr>
<tr>
<td>26. 19 130</td>
<td>26. 26 110</td>
<td></td>
</tr>
<tr>
<td>27. 8 149</td>
<td>27. 15 122</td>
<td></td>
</tr>
<tr>
<td>28. 10 104</td>
<td>28. 16 119</td>
<td></td>
</tr>
<tr>
<td>29. 16 113</td>
<td>29. 25 130</td>
<td></td>
</tr>
<tr>
<td>30. 20 107</td>
<td>30. 21 123</td>
<td></td>
</tr>
<tr>
<td>31. 0 115</td>
<td>31. 26 112</td>
<td></td>
</tr>
</tbody>
</table>

Means: 114.3 47.9 112.3 48.7 116.5 47.3

*a - Percent of gain in words derived from first year Latin. Gain
45 - initial score
b - Intelligence Quotient based on Terman Group Test of Mental Ability.
c - Latin Scrapbook; rated 1-10 on grades given for work.
d - Interest in class during derivative study; rated 1-10.
e - Achievement in Latin; based on scaled scores of Latin Cooperative Test.
CHAPTER VI
CONCLUSIONS

In chapter two, the purpose of this experiment was set forth in the form of two questions. The first question dealt with the effectiveness of teaching Latin derivation by the method described in chapter three.

Tables VII and VIII give the answer to this first question. The Cooperative Test was divided into three sections: one hundred and eight words of non-Latin origin; fifty-seven words of Latin origin, but not derived from first year Latin vocabulary; and forty-five words derived from the vocabulary of first year Latin. On the one hundred and eight words of the first type, the group averaged a gain of 5.43 words; on the fifty-seven words of the second type, the group averaged a gain of 3.19 words; and on the forty-five words of the third type, the group averaged a gain of 4.43 words. This comparison shows that the group made 33 per cent of their gain on only 21 per cent of the test. In comparing the gain in words on the first and third types, it is seen that twice as many words derived from first year Latin were gained as those of non-Latin origin. Likewise, the gain in words derived from first year Latin is almost doubled the gain in words of Latin
origin, which were not derived from the vocabulary of first year Latin, when the number of words of the two types is taken into consideration.

The results on the Inglis Test of English Vocabulary, presented in table VIII, confirm the gains of the Cooperative English Vocabulary Test. The Inglis Test of English Vocabulary was divided into the same three similar sections. It contains sixty-four words of non-Latin origin; fifty-nine words of Latin origin, but not derived from first year Latin vocabulary; and twenty-seven words derived from the vocabulary of first year Latin. On the sixty-four words of the first type, the group averaged a gain of 2.74 words; on the fifty-nine words of the second type, the group averaged a gain of 2.33 words; and on the twenty-seven words of the third type, the group averaged a gain of 2.72 words. On the Inglis test, the group made 34 per cent of their gain on 18 per cent of the test. Since there are more than twice as many words of the first type as of the third type and the gains on the two types are almost the same, it is evident that the group gained more than twice as many words derived from first year Latin vocabulary as it gained on words of non-Latin origin. When the gains of the second and third types are considered on the basis of the number of words in the test, there is a gain of more than two and one-half times as many words derived from first year Latin as of words of Latin origin, which are
not derived from first year Latin.

A close examination of table IX shows that some individual students made remarkable gains in the percentage of words, derived from first year Latin that they learned from September to May. Twelve students out of the eighty-six gained more than thirty per cent on words of this type. An inspection of the gains, as presented in tables I to VI, shows that certain students achieved a comparatively large proportion of their gain on words of the third type.

In September the three groups had a mean of 44.2 on the scaled score. The Cooperative Test Service gives the following end-of-year norms based on 90,000 students in 200 schools: 39.2, the mean for the eighth grade; 43.8, the mean for the ninth grade; and 47.5, the mean for the tenth grade. Since the students in this experiment have a higher intelligence quotient than an average group, it is expected that their mean on the vocabulary test would be higher than the mean for their grade. Accordingly, the mean scaled score of 44.2 would almost compare with the norm at the end of the ninth grade, and therefore, at such a point in the scaled score, 3.7 points would be the expected gain for a year. As the present study lasted only eight months, from the end of September to the end of May, the year's gain was interpolated to be 2.4 for an eight-month period. In table VII, the gain on the scaled score is given as 4.02. In either case, the gain of
4.02 is an appreciable difference over 3.7 or 2.4. The superior gain in words derived from first year Latin accounts for the majority of the group's increase over the standards for the test.

In most of the previous experiments on the teaching of Latin derivation, the Carr Test of English Vocabulary was used. This test seemed to be designed for such experiments, as every other word was of Latin origin whose derivation was comparatively simple. For this reason, the results of the present experiment can not be compared to the actual number of words gained in previous experiments.

A valid criticism, applicable to most of these studies, is made by Orleans, when he demonstrates that a great number of words of Latin derivation have undergone marked changes, often to the extent that the reader is not aided in reasoning out the meaning of a word with the background which high school Latin gives. The Latin derived words in the tests of these studies are mostly taken from words common to the derivative lists of first-year Latin textbooks, or at least common to derivative lists in the typical four-year high school course. The results, therefore, have been presented in terms of the percentage of Latin derived words in English, while the tests upon which the results are based were not a representative sample of Latin derived words.¹

The criticism made about selecting only common derivations...
tives for such vocabulary tests cannot be applied to either the Cooperative or the Inglis vocabulary tests. In the first place, the percentage of words derived from first year Latin, which are used in the test, is comparatively small. Secondly, an examination of those particular words, as presented in chapter four, will prove that they are not simple derivatives.

The above criticism, that many words of Latin derivation have undergone marked changes so that the reader is not aided in reasoning out the meaning of a word with the background which high school Latin gives, is certainly true. The first word on the Cooperative Test is a good example. The word 'carnival' is correctly answered by the response 'festival'. The student would certainly have difficulty in arriving at this response by his knowledge that carnival is derived from the Latin word, 'caro', which means 'meat' or 'flesh'. Likewise, the word 'albatross' is derived from 'alba', meaning white, but that is no clue that the correct response is 'bird'. Thus, many English derivatives are rather distantly related to their Latin roots.

One of the reasons commonly urged for the study of Latin is its tendency to increase the student's English vocabulary. The difficulty in the situation lies in the fact that, while many English words are derived from Latin sources, the meanings of the English words are often so warped or distantly derived that it is necessary to learn the specific meanings. Simply to recog-
nize that 'boaconstrictor' contains the root constrin gere 'to draw together', will not teach a pupil that it means a certain kind of reptile. So far as the root-meaning is concerned, the word might have been applied to scores of things that contract. This point was brought out forcibly by the students on whom the test was made. The Latin students recognized in many instances the presence of Latin roots in the English words used in the test, but they could not be sure of the specific meanings without having definitely ascertained them. In many instances they would ascribe, by inference from root-words, entirely erroneous meanings.2

An actual incident of such erroneous reasoning was evident on one item of the Cooperative Test. The word 'pedantic' was followed by the choices: (1) displaying anger, (2) having feet, (3) foppish, (4) conservative, (5) showing off learning. Out of the eighty-six students, twenty-nine attempted the item. One of these twenty-nine students got the correct response; three chose the first answer; one, the third answer; and twenty-four, the second answer. One of the twenty-four even underlined the first three letters of pedantic, thus showing that he thought the word was derived from 'pes, pedis'. Such statistics make it apparent that most students were misled.

Two other items on the same test might easily mislead the student. Following the item 'libretto' on page 5, are

2w. N. Starch, 700.
the responses, (1) operatic text, (2) small book, (3) freedom, (4) heroine, (5) game. Undoubtedly, the second and third responses are meant to remind the student of his Latin stems. On page 7, the item 'seminary' is followed by (1) greenhouse, (2) term, (3) school, (4) cemetery, (5) seed. Naturally, the third response is correct, but the Latin root is more closely related to the first and fifth responses.

The following quotation refers to similar items on a different vocabulary test.

The case of 'dogmatic' beautifully represents the perils of this particular sort of 'transfer' by discovering in a new and unfamiliar situation elements existing also in an old and familiar situation. There is always a chance in such a procedure that the particular identical elements discovered will not be the significant elements for the transfer under consideration...

In a vocabulary test, or in actual life experience, the successes in transfer far outweigh the failures, and the failures themselves are only an argument for better training for transfer rather than an argument against the existence of transfer or its value in problem solving.

The two vocabulary tests used in this experiment measured only the 'passive' English vocabulary of the student. This 'passive' vocabulary is clearly defined in the following quotation.

The investigation which I am

3W. L. Carr, "By Their Fruits", 348.
now reporting was directed to measuring one specific ability, namely, the pupil's 'passive' English vocabulary; that is, his ability to understand words when he meets them in the writing of speech of others, regardless of his ability to use them actively in his own speech.4

The results of the tests show objectively that the 'passive' English vocabulary of words derived from first year Latin was greatly increased. In regard to this same type of word, the student must certainly have increased his 'active' vocabulary, a fact which was not measured by these tests. Possibly many derivatives were already in the student's 'passive' vocabulary, but a better understanding brought them into his 'active' vocabulary. Likewise, the student with the aid of Latin roots may be able to define many of these derivatives when they appear in the course of natural reading, while he may be unable to define them in a test. The following quotation seems to substantiate this belief.

Type of training desirable. It should also be borne in mind that the particular experience in which a knowledge of derivation will operate in later life will, for most pupils, be in connection with reading in English. They will rarely, if ever, have occasion to form for themselves derivatives from Latin words or roots. In all normal experiences the pupil will have the context as well as the derivation of the word as a basis for understanding the word, and context is

as essential for the understanding of the meaning of an English as for a Latin word. We should, therefore, by the systematic study of derivatives occurring in natural English contexts, train the pupil for the actual use to which he will put his knowledge of derivation. Exclusive attention to the interpretation of words isolated from context obscures their essential function of expressing meaning.5

In a hurried examination of tables I to VI the losses in words made by many students seem to occur in too many cases. Sometimes these losses are surprisingly large. The greatest number of words lost on the Cooperative Test was 29 by student 2 in Group III (see table III). An investigation of that test paper showed that the student attempted far less items in May than he did in September. Since the test was scored by the number right minus one-fourth the number wrong, the scaled score gives a better idea of his ability than simply the number of words correct. In this particular case, it is seen that he lost only two points on the scaled score, which in all probability was due to his conservativeness in attempting items. In examining the scaled scores on the first three tables, it is observed that there are only seven losses among the eighty-six students. In all cases, except one, these losses are very small. However, they appear to be natural in such a statistical study.

This traces roughly a superiority of the Experimental Latins from the start all through the year. Yet in the sixth column of Table 36 we see four scattered losses for the Experimental Latins. As stated before, this will occur in the statistical arrangement of all human-trait measurements and comparisons in which large numbers are used to sample a general field of growth or attainment.  

In view of the preceding facts drawn from the data of this experiment, an affirmative answer may be given to the question regarding the effectiveness of teaching Latin derivation by the method described.

The second question, which was to be answered, concerned the most effective ways of increasing the student's knowledge of English words by the study of Latin.

One of the values of the study of Latin which we as Latin teachers proclaim the most is an increased ability to understand the exact meaning of English words derived directly or indirectly from Latin and increased accuracy in their use. At the time the Classical Investigation was made this ultimate objective was not only "regarded as valid for the course as a whole by 98 per cent of the teachers filling out the questionnaire," but was ranked high in the list of objectives, especially for the first and second years. In the ensuing decade and a half our feeling concerning the validity of this objective has, if anything, been strengthened. There is, therefore, no dissension among us as to the service

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6R. I. Haskell, 102.
of Latin toward an increased English vocabulary. But there is wide disagreement as to how this objective should be attained. In many cases our very anxiety to make full use of this objective has obscured for us the most effective way of doing so, or our enthusiasm has led us to snow our pupils under with long (and vague) lists of words.7

The first essential in any method on the teaching of Latin derivation is the teacher's derivative list. This list can not be made up in class, as both teacher and students would not be able to think of all the possible derivatives for a given Latin word. In the second place, it is impractical as it would consume too much of the class time; incessant recourse would have to be made to a good dictionary to prove the word-origin of many words. All this work must be prepared in a scholarly manner by the teacher himself.

The study of the general derivatives is at present, because of the lack of definite, information, haphazard and confined to the more obvious and consequently less important part of the field. Every teacher will readily, on the spur of the moment, think of 'viaduct' as a derivative of via, but the word 'impervious' a more interesting and more important word, will not arise spontaneously. Exact information must be at hand.8

Such information must be prepared by the teacher in or-

7Dorothy M. Bell, "What Related English Words Shall We Use?" Classical Journal, XXXV, March, 1940, 372-373.
order to attain the desired objective. The list must be rather extensive so that it includes the greatest number of useful words; yet, it must not be so long or difficult, that it would overburden the students. Then the arrangement of the derivatives is important. Familiar derivatives should come first, and then the unfamiliar ones.

Familiar vs. unfamiliar English derivatives. It is important both in theory and in practice to make a clear distinction between English derivatives presumably familiar and those presumably unfamiliar. The former provide an apperceptive tool valuable for the acquisition of Latin vocabulary; the latter provide opportunity for the application of newly acquired Latin vocabulary. In the first instance, a known English word furnishes a clue to the meaning of an unfamiliar Latin word. In the latter instance the known Latin word is used in the interpretation of an unfamiliar English word. While no absolute line can be drawn between the two types, since knowledge of English vocabulary varies with individual pupils, most words can be assigned to one group or the other with sufficient accuracy for practical purposes. Thorndike's Teacher's Word Book will be found very helpful on this point.9

Thus the importance of the teacher's derivative list is seen to be so necessary to the teaching of Latin derivation, that no further proof is needed.

In table IX, various data have been presented for the three groups under five different columns. In order to esti-

mate the relative importance of the different factors in the method, these data have been correlated by the Pearson Product-Moment Coefficient of Correlation.

As explained in chapter five, column 'a' of table IX represents the per cent of gain in words derived from first year Latin. This per cent was determined by dividing the gain in such words by forty-five, which was the total number of words of that type in the Cooperative Test, minus the initial score on that type of words. Column 'b' is the intelligence quotient of the students. The correlation between the per cent of gain in words and the intelligence quotient was .116. From the fact, that there is such a slight positive correlation, it may be concluded that all the students engaged in the experiment had sufficient intelligence to receive profit from their study of Latin derivation and that intelligence was not a deciding factor for increasing the knowledge of words derived from first year Latin.

In table IX, column 'c' represents the rating, from one up to ten, received by the student for the grades achieved on his Latin Scrapbook. The correlation between column 'a' and column 'c' was .0008. The positive correlation was so slight that it might be stated no correlation existed. Such evidence, however, does not prove the Scrapbook worthless. Several circumstances must be considered, the Latin Scrapbook was not made obligatory and as a result only 70 per cent of the group
did satisfactory work on the Scrapbook. Secondly, the Scrapbook was not started until the second semester. Undoubtedly, the work of finding derivatives in newspapers, advertisements, etc., had some good effects on many students, but there is no way of separating such factors in an experiment of this nature. It is recommended that the Latin Scrapbook be made obligatory on all students and that work on it be commenced, at least, by the end of the first quarter.

Likewise, column 'a' was correlated with column 'd', which consists of the rating, from one up to ten, made by the teacher on the pupil's interest and activity during the part of the lesson spent on derivatives. The correlation was .542, comparatively high when considering the previous ones. Although the rating may seem purely subjective, it was made by ranking the pupils into ten divisions on their interest in the lessons on derivatives without any attention to their vocabulary scores. All of the twelve students, who gained more than 30 per cent as shown in column 'a', were considerably above the average in the activity and interest they showed during the explanation of the derivatives. "The interest of the pupils, which was reported upon favorably in the four schools, must have played a very important part in the results obtained." 10 From the present experiment, it is concluded that the interest shown by the students in the study of derivatives during the

10 A. A. Hamblen, 45.
class time allowed was an important factor in the method.

Column 'e' in table IX represents the scaled score made on the Latin Cooperative test. The correlation between column 'a' and column 'e' was .341. This positive correlation seemed somewhat natural as it was expected there should be a certain relation between achievement in Latin and the amount of increase in knowledge of English derivatives. This correlation was not so high, that it might be erroneously concluded that only the better Latin students increased their knowledge of English derivatives.

In answering the second question of this study, there were three important factors used to increase the student's knowledge of English words by the study of Latin. These three elements were so closely related that the gains made can not be attributed to any one, but rather to the combination of the three. They were the teacher's derivative list, the amount of class time during which these derivatives were presented and explained, and the interest shown by the students during class on the discussion and explanation of these derivatives. The correlation between the per cent of gain on words derived from first year Latin and the interest shown in class, seems to substantiate this opinion. The small correlations on both Latin achievement and on the intelligence quotient lead to no decisive conclusion. While the correlation on the Latin Scrapbook indicates that it was not an important factor to
most students.

SUMMARY OF CONCLUSIONS:

1. That the students, taught Latin derivation by the method described, gained, on both the Cooperative and the Inglis vocabulary tests, twice as many words derived from first year Latin as they gained in words of non-Latin origin or in words of Latin origin, but not derived from the first year Latin vocabulary.

2. That the group gained an average of 4.02 points on the scaled score of the Cooperative vocabulary test, which is superior either to the mean gain of 3.7 points for a similar group during a year, or to the mean gain of 2.4 points if only the period of eight months is considered. This superior gain can be accounted for by the increase in knowledge of English derivatives from first year Latin.

3. That, as shown by the correlation of .542, the interest, which the students displayed in the explanation of these English derivatives, was, along with the derivative list and the class time spent, an important factor in the method of teaching Latin derivation.

4. That the intelligence quotient of the students and the use of a Latin Scrapbook appeared to be only of slight importance to the method.

5. That achievement in Latin was not a very decisive element for increasing a knowledge of English derivatives.
The foregoing conclusions were made under the limitations described in the present experiment. The first and second conclusions confirm the findings of many other investigators. The last three conclusions demand further investigation before any definite statement can be made with certainty. For the benefit of future investigators on this same problem, it is suggested that the derivatives be presented to the students in mimeographed form so as to allow more class time for the explanation of the words and for other vocabulary-building devices. Although it was believed that the Latin Scrapbook was an aid in increasing the vocabulary of some students, no general conclusion could be made to show its value for the group as a whole.
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3. Carr, W. L. "First-Year Latin and Growth in English Vocabulary," School and Society, XIV (September 17, 1921), 192-98.


APPENDIX I

TEACHER'S DERIVATIVE LIST FOR FIRST YEAR LATIN

I
est
present, presence, absent, essence, essential.

insula
insular, peninsula, insulator, insulation.

non
non-conductor, non-skid, non-interference.

parvus
parvanimity, parvitude.

II
et
etc.- et cetera.

magna
magnify, magnanimous, magnificent, magnanimity, magnitude, magnate, majesty, major, mayor, maxim, main, maximum.

patria
patriot, patriotic, patriotism, expatriate.
pulchra
pulchritude.
terra
interred, terrace, disinter, terrain, terrestrial, territory, subterranean, terrier, mediterranean, interment.

III
agricola
agriculture, agricultural.
amo
amiable, amateur, inimical, amity, enmity, enemy, amiability, enamoured.
casa
cassock, chasuble, casino.
cur
curious, curiosity.
filia
filial, affiliate, filiation.
habet
prohibit, exhibit, inhibit, habit
laudo
laudatory, laud, laudable, laudation.
multa
multicolored, multitude, multiply, multilateral, multiform.
pecunia
pecuniary.

V
alba
alb, albino, albumen, albatross.
bona
bounty, Boniface, bonus.
epistula
epistle.
longa
longitude, longevity, longitudinal.
nauta
aeronautics, nautical, nautilus.
schola
scholar, scholastic, scholarship.
scribit
inscribe, scribe, subscription, scribble, Scripture, postscript, manuscript, describe, circumscribe, prescribe, prescription, superscription.

Videmus
visible, cision, cisual, supervision, supervisor, provide, evident, view, visit, vizor.

periculosa
perilous, peril, imperil.
poeta
poet, poetry, poetical.
vita
vital, vitality, vitalize, vitamin.

VII
dant
data, dative, tradition, donation, donor, donate, endowment, pardon, edition.
laeta
Laetare (Sunday), Laetare (Medal).
legit
legible, illegible, lecture, select, elect, eligible, legend.
ostendit
ostentation, ostensible, ostension, ostensorium.
rosa  
rosary, rose.

VIII

fabula  
fabulous, fable.

monstrat  
demonstration, demonstrate, monstrance, monster.

narrat  
narrative, narrate, narration.

pictura  
picture, picturesque.

IX

bene  
benefactor, beneficent, benediction, benevolent, Benedict, benefit.

benigna  
benign, benignity, benignancy.

fenestra  
fenestral.

grata  
gratitude, grateful, grace, gratify, ingratitude, ingrate, agree, disgrace, congratulate.

silva  
sylvan, Pennsylvania, Sylvester, savage.

X

ambulant  
amble, ambulance, preamble, circumambulate.

cum  
conjunction, contact, combat, cooperate, collide, correspond, commemorate, concur, conduce.

e, ex  
expel, eject, except, evade, exclude, excavate, excommunicate, exhibit, emerge, emigrate, eliminate.

in  
invade, import, induce, inject, endanger, immerse, immigrate, impress, include, incurve, inspire.

via  
via, trivial, viaduct, previous, devious, deviate, obvious, convey, envoy, voyage.

XI

aperta  
aperture, April, overture.

discimus  
disciple, discipline.

expectat  
expect, expectancy, expectation, unexpectedly.
fama  fame, defamation, famous, famicide.
lingua  bilingual, linguist, language, lingo, lingual.
nostra  nostrum.

XII
angusta  anguish, angustate.
aqua  aquatic, aqueduct, aquarium, aqueous.
propinquua  propinquity, propinquous.
separat  separation, separate, separator.
villa  villa, villain, village.

XIII
aegra  aegrotat.
clarapropinquua  eadrome, anesthesia.
propinquua  propinquity, propinquous.
separat  separation, separate, separator.
villa  villa, villain, village.

XIV
janua  janitor, January, Janus.
laboro  labor, laborer, laborious, laboratory, elaborate, collaborate.
porto  porter, portable, deportment, report, transport, import, export, deport, portfolio, passport.
sto  station, stationary, stability, stable, obstacle, constancy, statue, stature, status, unstable, circumstances,
stance, resistance, armistice, apostate.

ubi
ubiquity.

vesper
vesper, vesperal.

XV

colit
culture, cult, agriculture, colony, horticulture.

minime
minimum, minimize, diminutive.

urna
urn.

XVI

oppidum, -i, N.

oppidan.

praemium, -i, N.

premium.

tectum, -i, N.
tectorial, tectiform.

templum, -i, N.
temple, contemplate, Templar.

XVIII

habito, -are

habitable, inhabitant, inhabit, habitation, habitat, habit.

hieme
hiemal.

manet
permanent, mansion, remain, remainder, immanent, remnant, manor.

nota
noted, notoriety, note, notable, notify, notice, notary, annotate.

tabernaculum, -i, N.
tabernacle, tabernacular.

XIX

amicus, -i, M.
amicable, amiable, amity, amiability.

domi
domestic, domicile, domesticate.

equus, -i, M.
equestrian.

filius, -i, M.
filial, affiliate, filiation.

nullus
nullify, annul, null.
timet
timid, intimidate, timidity.

XX

ager, agri, M.
agriculture, agrarian, acre, acreage.
cena, -ae, F.
  cenacle.
femina, -ae, F.
  feminine, effeminate, feminacy.
liber, libri, M.
  libel, library, librarian.
lilium, -i, N.
  lily.
paro, -are.
  prepare, reparations, irreparable, repair, preparation, parade.
puer, pueri, M.
  puerile.

XXI

edunt
  edible, inedible.
frumentum, -i, N.
  frumentaceious, frumentary.
hodie
  hodiernal.
hortus, -i, M.
  horticulture, horticultural.
solus
  solitary, sole, soliloquy, solo, solitaire, solitude.
validus
  valid, invalid, validity, invalidate.

XXII

juvo, -are.
  adjuvant, adjutor.
mensa, -ae, F.
  mesa, mensal.
pretiosus, -a, -um.
  precious, preciousness.
probo, -are.
  proof, prove, approbation, reprobate, disprove, approval, probable, probation.

XXIII

bellum, -i, N.
  belligerent, rebel, rebellion, belligerous.
consilium, -i, N.
  counsel, consiliary, counselor.
gladius, -i, M.  
gladiator, gladiatorial, gladiolus.
pugno, -are.  
pugnacious, repugnant, pugilist, pugnacity.
satis  
satisfy, insatiable, dissatisfaction, satiety, satisfactory.
scutum, -i, N.  
scutular.

XXVI

a, ab  
abduct, avert, abstain, abdicate, ablative, abnormal, absent, absolve, ablation.
arma, -orum, N.pl.  
armory, Armistice, alarm, disarmament, armor.
castra, -orum, N.pl.  
Chester, Rochester, Dorchester, castral.
gea, -ae, F.  
galeate, galeatiform.
latus, -a, -um.  
latitude, latitudinal, lateral, collateral.
mele  
malfactor, malevolent, malady, maltreat, malaria, mal- 
diction, malice, malign, malformation.
vir, viri, M.  
virile, virility.

XXVIII

dextra, -ae, F.  
dexterity, dextrous, ambidextrous.
sagitta, -ae, F.  
sagittal, sagittate.
sinistra, -ae, F.  
sinister, sinisterity, sinistral.
tertius, -a, -um.  
Tertiary, tertian, tertiote.
tres  
trivial, trident, triangle, tricolor, tricycle, trinity, 
trio, triple, triduum, triennial, tripod, trireme.

XXIX

ad  
advent, adhere, adjective, adverb, adjacent, affect, adhesive, administer, address, aggregate, append, arrive, attempt.
aedificium, -i, N.  
edifice.
ante  
anteroom, antecedent, anticipate, antependium, antepenult,
anterior, antique, ancient.

hora, -ae, F.
hour, horal, hourly.

invito, -are.
invite, invitation.

per
perennial, percolate, perception, permanent, pervert,
pervade, perpendicular, perpetual, persevere, persist,
perfect.

post
postscript, postpone, postgraduate, post-mortem, post-
meridian, posterior.

trans
transcontinental, tradition, transatlantic, transmitter,
transgress, transfer, transcribe, trespass, transact,
transfigure, transfix, transform, translate, transparent,
transplant, transportation.

XXX
copia, -ae, F.
copious.
debeo, -ere.
debt, indebtedness, debit, debtor.
moneo, -ere.
monitor, premonition, admonition, admonish, money, mint,
monument.
paratus, -a, -um.
see paro XX.
periculum, -i, N.
see periculosa VI.
socius, -i, M.
social, society, associate, socialize, socialism.

XXXII
clemo, -are.
clamor, exclamation, proclamation, acclamation, clamor-
ous, exclaim, exclamatory, disclaim.
magister, -tri, M.
master, Mr., Mrs., Miss, magisterial, magistrate.
poena, -ae, F.
penitentiary, penal, subpoena, penalize, penitent, penen-
ance, penalty, impenitence.
verbun, -i, N.
verbal, verbosity, verb, adverb, verbose, proverb, ver-
batim, proverbial.

XXXIV
caecus, -a, -um.
caecum, caecal.
iterum
reiterate, iterance, iterate.
locus, -i, M.
location, dislocate, local, locate, locus, locative, locomotion, locomotive.
sine
sincere.
timidus, -a, -um.
timid, intimidate, timidity.
tutus, -a, -um.
tutor, tutelage, tuition.

XXXV
auxilium, -i, N.
auxiliary.
desidero, -are.
desire, desideratum.
fortiter
fortitude, fortify, fortress.
occupo, -are.
occupy, occupation, occupants.
postulo, -are.
postulancy, postulant.
pro
pro, pro-slavery, propose, produce, proclaim, propel, pronoun.
vasto, -are.
devastate, vast, devastation.

XXXVII
absum
absent, absence.
albus, -a, -um.
altritude, exalt, alto, exaltation, altimeter.
inter
international, interurban, intervene, interstate, intercourse, interlude, interregnum.
jubeo, -ere.
jussive.
me
me.
murus, -i, M.
mural, intermural.
respondeo, -ere.
respond, response, responsible, correspondents.
voco, -are.
vocation, vocal, convok, avocation, vocative, vocabulary, vocalize, irrevocable, revoke, invoke, invocation, advocate, convocation, voice, vouch.
XXXVIII

acriter
acr, acrimonious.
oppgn, -are.
oppgn, oppugnanc.
populus, -i, M.
population, popular, populace, public, publish, republic,
publicity.
rogo, -are.
interrogative, interrogate, rogation, prerogative.
supero, -are.
insuperable.

XL

armatus, -a, -um.
armature, armada, armadillo.
audeo, -ere.
audacious, audacity.
avunculus, -i, M.
avuncular.
circumspecto, -are.
circumspect, circumspection.
inimicus, -i, M.
inimical, enmity.
nos
nosism, nostrum.
saluto, -are.
salute, salutation.

XLII

barbarus, -i, M.
barbarous, barbaric, barbarian.
deleo, -ere.
indelible, delete, deletion.
moveo, -ere.
movement, movable, mobile, motor, motive, motion, demote,
remove, automobile, locomotive.
servo, -are.
preserve, reserve, observe, conservation, reservoir.
vulnere, -are.
vulnerable, invulnerable, vulnerability.

XLIII

bestia, -ae, F.
beast, beastly.
ceteri, -ae, -a.
etc., et cetera.
erro, -are.
err, error, erroneous, aberration.
ferus, -a, -um.
ferocious, ferocity.

semper
sempiternal, sempervirent.

servus, -i, M.
servile, subservient, serve, service, servant, servitude,
deserve, serf, sergeant.
totus, -a, -um.
total, totality.

impero, -are.
imperative, imperious.

lignum, -i, N.
lignite, lignivorous, lignography, ligneous.

perfidus, -a, -um.
perfidious, perfidy.
suus, -a, -um.
suicide.

dux, ducis, M.
 duke, duchess, ducal, deduct, introduce, conducive.

frater, fratris, M.
fraternal, fraternity, fratricide, friar.

homo, hominis, M.
homicide, homage.
miles, militis, M.
militia, military, militarize.
pater, patris, M.
paternal, paternity, patrimony, patrician, patricide, 
patron, patronize, patriarch.
rex, regis, M.
regal, regicide, royal, regalia.

facile
facility, facilitate.
mora, -ae, F.
moratorium.
pauci, -ae, -a.
paucity, paucify.
pax, pacis, F.
pacific, Pacific, pacify, peace, appease, pay.
soror, sororis, F.
sorority, sororal, sorricide.
tergum, -i, N.
tergal, tergite.
caput, capitis, N.
capital, decapitate, captain, cap, chief, chef, chapter,
cattle, capitular, capitulate, Capitol, achieve, precipice, precipitate.
corpus, corporis, N.
corporal, corpulent, corpuscle, corpse, corps, incorporate, corporation, corselet, corporeal.
flumen, fluminis, N.
fluminous.
medius, -a, -um.
medium, mediocre, immediate, intermediate, median, mediation, medieval, meridian, mediterranean, mezzanine.
nato, -are.
natatorium, natation.
ripa, -ae, F.
riparian, arrive, riparious.
saxum, -i, N.
saxatile.
sedeo, -ere.
sedentary, seat, preside, president, supersede, residence, residue, subside, reside, possess, sedate, sediment, sedulous, obsession, session, siege, insidious.

XLVIII

appropinquo, -are.
propinquity, appropinquate.
avis, avis, -ium, F.
aviator, auspicious, aviary, aviation, augur, inaugurate.
cibus, -i, M.
cibation, cibarious.
collis, collis, -ium, M.
colline.
lux, lucis, F.
translucent, lucid, elucidate, Lucifer, lustrous, luminous.
ox, noctis, -ium, F.
nocturnal, equinoctial, noctambulist, nocturn.
nubes, nubis, -ium, F.
nobilious, nubecule.
sileo, -ere.
silence, silent.
summus, -a, -um.
sum, summary, summation, summit.

XLIX

animal, animalis, -ium, N.
animal.
cele, -are.
conceal, concealment.
<table>
<thead>
<tr>
<th>Latin Word</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>exemplar, -aris, -ium, N.</td>
<td>exemplary, example, exemplar, exemplify.</td>
</tr>
<tr>
<td>figura, -ae, F.</td>
<td>figure, figurate, figuration.</td>
</tr>
<tr>
<td>hostis, hostis, -ium, M.</td>
<td>hostile, host, hostility.</td>
</tr>
<tr>
<td>insigne, insignis, -ium, N.</td>
<td>insignia.</td>
</tr>
<tr>
<td>signum, -i, N.</td>
<td>sign, signal, designate, assignment, signature, design, signet, resignation.</td>
</tr>
<tr>
<td>civis, civis, -ium, M. or F.</td>
<td>civic, civilian, civility, citizen, city, civics, civil, civilize.</td>
</tr>
<tr>
<td>excito, -are.</td>
<td>excite, excitement, excitable.</td>
</tr>
<tr>
<td>gens, gentis, -ium, F.</td>
<td>gentile, congenial.</td>
</tr>
<tr>
<td>urbs, urbis, -ium, F.</td>
<td>urban, interurban, intraurban, urbane, urbanity.</td>
</tr>
<tr>
<td>calamitas, -atis, F.</td>
<td>calamity, calamitous.</td>
</tr>
<tr>
<td>cras</td>
<td>procrastinate, procrastinator.</td>
</tr>
<tr>
<td>de</td>
<td>descend, depose, depend, desist, deduce, decapitate, decay, decline, deflate, degenerate, diminish.</td>
</tr>
<tr>
<td>expugno, -are, -avi, -atum.</td>
<td>expugn, expugnation.</td>
</tr>
<tr>
<td>lateo, -ēre, -ui.</td>
<td>latent, latescent.</td>
</tr>
<tr>
<td>nuntius, -i, M.</td>
<td>announce, annunciation, denunciation, pronunciation, re- nunciation.</td>
</tr>
<tr>
<td>salus, salutis, F.</td>
<td>salutary, salubrious.</td>
</tr>
<tr>
<td>terreo, -ere, -ui, -itum.</td>
<td>terror, terrify, terrible, deter.</td>
</tr>
<tr>
<td>finis, finis, -ium, M.</td>
<td>finis, final, infinity, confine, definition, infinitive, finish.</td>
</tr>
<tr>
<td>iter, itineris, N.</td>
<td>itinerary, itinerant.</td>
</tr>
</tbody>
</table>
porta, -ae, F.
portal.
prospecto, -are, -avi, -atum.
prospect, prospective.
vallum, -i, N.
interval.
vigil, vigilis, M.
vigilant, vigil, vigilance.

LV
comes, comitis, M. or F.
count, constable, comitant.
funda, -ae, F.
insula.
hasta, -ae, F.
hastate, hastiform.
lapis, lapidis, M.
delapidate, lapidary.

LVI
appello, -are, -avi, -atum.
appellation.
circum
circumnavigate, circumference, circumstance, circulate, circumscribe.
idoneus, -a, -um.
idoneous.
mons, montis, -ium, M.
mount, mountain, amount, Montana, dismount, paramount, promontory.
nomen, nominis, N.
nominal, nomination, nominative, noun, pronoun, nomenclature.
ulterior
ulterior.

LVIII
alius, alia, aliud.
alias, alien, inalienable.
centurio, -onis, M.
centurion.
iniquus, -a, -um.
iniquity.
legio, legionis, F.
legion, legionary.
mitto, -ere, misi, missum.
remit, mission, intermittent, missile, transmitter, intermission, admit, admission, emit, dismiss, omit, committee, emissary.
pars, partis, -ium, F.
part, particle, partial, participate, participle, partake, partition, apartment, partner, impart, party, impartial, depart.
dono, -ere, posui, positum.
depose, position, deposit, imposition, composition, exposition, opposition, opponent, apposition, preposition, compound, exponent, supposition, posture.
vino, -ere, vici, victum.
convolve, invincible, Vincent, Victor, convict, victory, evict, vincible.

LIX
capi, -ere, cepi, captum.
captive, captivate, captivity, captor, capture, anticipate, accept, intercept, receive, recipe, reception, capable, capacity, receptacle, receipt.
clamor, -oris, M.
see clamor XXXII.
duo, duae, duo.
dual, duet, duel, duplicate, duplicity, duply.
exceptio, -cipere, -cepi, -ceptum.
except, exception.
imperator, -oris, M.
emperor, empress.
procedo, -cedere, -cessi, -cessum.
proceed, process, procession, procedure.

LX
cupio, -ere, -ivi, -itum.
cupidity, concupiscence.
defendo, -fendere, -fendi, -fensum.
defense, defend, indefensible, defendant, defensive.
expello, -pellere, -puli, -pulsum.
expel, expulsive, expulsion.
gero, -ere, gessi, gestum.
exaggerate, congestion, digest, belligerent, gesture, register, suggest.
jacio, -ere, jeci, jactum.
abject, dejected, eject, inject, object, project, reject, subject, projectile, adjective, ejaculation.
tego, -ere, texi, tectum.
detective, protective, protectorate, protege, tegument.

LXI
audio, -ire, -ivi, -itum.
auditorium, audible, audition, audience, inaudible, obedient.
legatus, -i, M.
legate, legation, delegate.
munio, -ire, -ivi, -itum.
munitions, ammunition.

pes, pedis, M.
impede, pedestal, impediment, pedestrian, quadruped,
   pedal, centipede, expedition.

scio, scire, scivi, scitum.
science, omniscient, scientific, conscious, conscience.

sonus, -i, M.
sonorous, sound, resound, consonant, sonnet, impersonate.
tenebrae, -arum, F. pl.
tenebrae, tenebrous.

venio, -ire, veni, ventum.
convention, advent, convene, event, inventor, prevent,
   revenue, intervenes, convent, convenience, adventure, avenue.

LXII
annus, -i, M.
annual, anniversary, perennial, biannual, biennial, annuity, centennial.
exul, exulis, M.
exile.
navis, navis, -ium, F.
navy, navigable, navigate, naval, nave, nausea, navigator.

neglego, -ere, neglecti, neglectum.
neglect, neglectful.
officium, -i, N.
officer, office, official.
potentia, -ae, F.
potential, potency, potent.

LXIII
arbor, arboris, F.
arbor, arboreal, arboriculture.
celeriter
accelerator, celerity, accelerate.
dormio, -ire, -ivi, -itum.
dormant, dormitory, dormancy.

fluc, -ere, fluxi.
fluid, influence, influx, fluent, superfluous, fluency,
   fluctuate.
gramen, graminis, N.
gramineous, graminivorous.
jaceo, -ere, -ui.
adjacent, circumjacent, joist, gist.
mater, matris, F.
maternal, maternity, matricide, matron, matrimony, metropolis.
somnus, -i, M.
insomnia, somnambulist, somnolent.

subscribe, submarine, submerge, subway, subject, suffix,
suppose, sustain, subdeacon, subdue, suburb, suffer,
suspend.

aedifico, -are, -avi, -atum.
edify, edifice.
amphitheatrum, -i, N.
amphitheater.
facio, -ere, feci, factum.
sacrifice, fact, faction, factor, faculty, benefactor,
manufacture, beneficent, deficient, factory, magnificent,
magnify, counterfeit, perfect.
gladiator, -oris, M.
see gladius XXIII.
pugna, -ae, F.
see pugno XXIII.

consul, consulis, M.
consul, consulate, consular.
numerus, -i, M.
umeral, innumerable, enumerate.
promo, -ere, pressi, pressum.
press, expressive, depression, pressure, compress, express,
impress, reprimand, print, imprint, imprimatur.
puto, -are, -avi, -atum.
repute, dispute, compute, reputation, count, discount,
deputy.
sui
suicide, suicidal.

castellum, -i, N.
castle, castellated.
explorator, -oris, M.
explorer, exploratory, explore, exploration.
pons, pontis, -ium, M.
pontoon, pontifical, pontiff, pontificate.
postea
see post XXIX.
repello, -pellere, reppuli, repulsum.
repellent, repel, repulsive.

amitto, -mittere, -misi, -missum.
amissible, amissibility.
diruo, -ruere, -ru, -rutum.

dire.

ruina, -ae, F.

ruin, ruinous, ruination.

unus, -a, -um.

unite, unanimous, reunion, uniform, unify, universal, unity, unit, unison, univocal, universe, unique, univorn, university, onion, union.

LXX

antiquitus

antiquity, antique, antiquate.

divido, -ere, divisi, divisum.

divide, dividend, divisible, division, divisor.

intra

intramural, intraurban, interior, intrinsic, intrastate, introduction.

primus, -a, -um.

primary, prime, primitive, primeval, primacy, primer, prior, prince, principal, principle.

septem

September, septenary, septilateral.

LXXI

qualis, quale.

quality, qualify, qualification.

quot

quota, quotient, quotennial.

sublicius, -a, -um.

Sublician (Bridge).

LXXII

acer, acris, acre.

acid, acid, acute, acrimonious, acridity.

facilis, -e.

facility, facilitate, facile.

fortis, -e.

fortitude, comfort, fort, fortify, effort, enforce, fortification, fortress.

fuga, -ae, F.

fugitive, fugacious.

fugio, -ere, fugi.

fugitive, centrifugal, fugitation.

gravis, -e.

grave, aggravate, grief, gravity, grievous, aggrieve.

omnis, -e.

omnipotent, omniscient, omnipresent, omnibus, omnivorous, omnipresence.
accipio, -ere, -cepi, -ceptum.
accept, acceptable, acceptance.
durus, -a, -um.
durable, endurance, obdurate, endurable, durability.
frango, -ere, fregi, fractum.
fracture, infraction, fragment, fragile, frail, fraction, refractory, infringe, refract.
imperat~um, -i, N.
see impero XLIV.
pervenio, -ire, -veni, -ventum.
see venio LXI.
securis, -is, -ium, F.
securiferous, securiform.
verbera, -um, N. pl.
verberation, verberate, reverberation.
victoria, -ae, F.
victory, Victoria, victorious.

conjicio, -jicere, -jeci, -jectum.
conjecture, conjectural.
felix, felicis.
felicity, felicitous, felicitation.

potens, potentis.
see potentia LXII.
rego, -ere, rexi, rectum.
direct, dirigible, regulate, correct, erest, regal, regiment, rectangle, rectify, rule, regent, regular, region, regime, royal.
sapiens, sapientis.
sage, sapient, savant, sapiential.
vinculum, -i, N.
vinculum, vinculate.

conspectus, -us, M.
conspectus, conspicuous.
convenio, -venire, -veni, -ventum.
convention, convene, convenient.
exercitus, -us, M.
exercise.
impetus, -us, M.
impetus, impetuous, impetuosity.

incipio, -cipere, -cepi, -ceptum.
incipient, incipience, inception.
nobilis, -e.
noble, nobility, ignoble.
LXXVI

eo, ire, ii, itum.
circuit, ambition, initiative, seditious, concomitant, obituary.
exeo, -ire, -ii, -itum.
exit, exiton.
mare, maris, N.
marine, submarine, mariner, maritime, transmarine.
transseo, -ire, ii, -itum.
transit, transient, transitory, transition, transitive, intransitive.

LXXVII

curro, -ere, cucurri, cursum.
current, occur, course, incur, currency, excursion, concur, cursory, precursor, recourse, recurrent.
relinquo, -linquere, -liqui, -lictum.
relinquish, relic, derelict, reliquary.
sero
serotinous.
tandem
tandem.
vertu, -ere, verti, versum.
version, invert, verse, reverse, adverse, divert, anniversary, incontrovertible, versatile, adversary, controv-
vert, divers.

LXXVIII

custodio, -ire, -ivi, -itum.
custodian, custody.
dispono, -ponere, -posui, -positum.
dispose, disposal, disposition.
quattuor
quart, quartet, quarter, quadruped, quartile, quadrangle, quadrilateral.
tempus, temporis, N.
temporary, temporal, tense, contemporary, extemporaneous.
vigilia, -ae, F.
vigil, vigilance, vigilant.

LXXIX

caedo, -ere, cecidi, caesum.
decide, decision, suicide, incision, homicide, regicide, fratricide, incisive, precision.
dico, -ere, dixi, dictum.
diction, dictionary, edict, predict, contradict, verdict, valedictory, dictator, dedicate, indicate, benediction, malediction, abdicate.
noli, nolite.
nolition.
pello, -ere, pepuli, pulsum.
  repel, repulse, impulse, compel, propel, dispell, expel, pulse.
restituo, -ere, restitui, restitutum.
  restitution.
sumo, -ere, sumpsi, sumptum.
  assume, consume, presumption, resume, sumptuous.
tempo, -are, -avi, -atum.
  tempt, attempt, temptation.

LXXXI
alter, altera, alterum.
  alternative, alter, alternate, altruism, altruistic.
circumvenio, -venire, -veni, -ventum.
  circumvent, circumvention.
paene
  peninsula, penult.
recipio, -cipere, -cepi, -ceptum.
  recipe, recipient, reception, receptacle.
signifer, signiferi, M.
  signifer, signiferous.

LXXXIII
honor, -oris, M.
  honor, honorable, honorary.
injuria, -ae, F.
  injury, injure, injurious.
magis
  see magister XXXII.
quinque
  quintet, quintuple, quintessence, quinquennial.
tuto
  see tutus XXXIV.

LXXXIV
aperio, -ire, -ui, apertum.
  aperture, aperient.
peto, -ere, -ivi, -itum.
  petition, competitor, appetite, perpetual, repeat, repetition, incompetent.
resisto, -sistere, -stiti.
  resist, resistance, resistless.
sol, solis, M.
  parasol, solar, solarium, solarize, solstice.
surgo, -ere, surrexi, surrectum.
  surge, resurrection, insurrection, insurgent.
teneo, -ere, -ui.
  retain, abstinence, tenacity, retention, detain, detention, tenor, tenure, tenement, obtain, contain, certain, sustain, continue, pertinacious.
LXXXVI

animus, -i, M.
animate, unanimous, animal, magnanimous, inanimate.
attendo, -tendere, -tendi, -tentum.
attend, attendance, attention, attentive.
condo, -ere, condidi, conditum.
condition, conditional, conditioned.
controversia, -ae, F.
controversial, controversy.
iratus, -a, -um.
irate, irascible, ire.
irrideo, -ridere, -risi, -risum.
ridicule, ridiculous, derision, deride.

LXXXVII

adventus, -us, M.
Advent, advent, adventure, adventurous.
fulgeo, -ere, fulsi.
refulgent, fulgent, fulgency.
intro, -are, -avi, -atum.
introduction.
sext, sextet, sexennial.
silentium, -i, N.
silence, silent.

LXXXVIII

antiquus, -a, -um.
antiquity, antique, antiquated.
communis, -e.
common, communion, communism, communicate, communistic, community.
imperium, -i, N.
empire, imperialism, imperialist.
lex, legis, F.
legal, legislature, legislation, legislator, legality, legalize, legacy, legislate, legitimate, illegal, loyal, allegiance, privilege.

LXXXIX

ago, agere, egi, actum.
action, navigate, agent, active, agency, actor, inactive, exact, reagent, ambiguous, prodigal, react, agitate, activate, counteract.
gratia, -ae, F.
see gratus IX.
odi, odisse.
odium, odious.
vox, vocis, F.
voice, vocal, vocable, equivocal, vociferous, vocalist.
vocalize.

brevis, -e.
- brevity, abridged, unabridged, abbreviate, brief, breviary.

cado, -ere, cecidi.
- cadence, decay, accident, casual, chance, chute, parachute, incidental, occasion, case (grammar), decadent, coincide, cascade, casualty.

demitto, -mittere, -misi, -missum.
- demit, demissory, demission, demise.

funis, funis, -ium, M.
- funis, funiculus.
lacus, -us, M.
- lake, lacuscular.

prehendo, -hendere, -hendi, -hensum.
- comprehend, apprehend, prison, comprehension, apprentice, imprison, surprise, enterprise, impenetrable, reprehend.

tractor, contract, protract, distract, attract, subtract, extract, retract, abstract, retract, retreat, tract, trace, treaty, treatise, portrait, trait, subtrahend, train, entreat.

contra
- contrary, contradict, contradiction, controversy, contrast, counteract, contravene, controvert.

creo, -arc, -avi, -atum.
- create, creation, creative, creator, creature.

celus, sceleris, N.
- scelerate.

superbia, -ae, F.
- superb, superbious.

ultimus, -a, -um.
- ultimatum, penult, ultimate, ulterior, ultima.

uxor, -oris, F.
- uxorial, uxoricide.

arcus, -us, M.
- arc, arch, archer, arcade, archery.
cervus, -i, M.
- cervine.

sonitus, -us, M.
- see sonus LXI.

umerus, -i, M.
- humeral, humerus.
ventus, -i, M.
ventilate, vent, ventilation, ventilator.

culpo, -are, -avi, -atum.
culpable, exculpate, culprit, inculpable.
desero, -ere, -ui, -tum.
desert, desertion.
deus, -i, M.
deify, adieu, deity, deification.
esurio, -ire.
esurient, esurience.
immaterialis, -e.
immaterial, immortality, immortalize.
invenio, -venire, -veni, -ventum.
invent, invention, inventive, inventory.
recte
rectangle, rectitude, rectify, rectilinear.

XCV

caro, carnis, F.
carnivorous, carnival, carnation, carnal, incarnate.
credo, -ere, credidi, creditum.
credible, creed, credit, credulous, incredible, credence, credulity, discredit, credential, incredulity.
fera, -ae, F.
feral, ferine.
fidelis, -e.
fidelity, faith, fealty, perfidious, confident, fiance, fiancee, affidavit.
ignis, ignis, -ium, M.
ignite, ignition, igneous.
nihil, N.
nil, nihilism, nihilist, annihilate.
recta
see recte XCIV.

XCVI

accendo, -cendere, -cendi, -censum.
accendite, accension.
dies, -ei, M. or F.
diary, diurnal, diet (single session), dismal, journal, journey.
ramus, -i, M.
ramify, ramification.
remus, -i, M.
trireme.
res, rei, F.
real, realize, reality.
siccus, -a, -um.
siccate, siccative.

verus, -a, -um.
veracious, verdict, verify, verification, verity, aver.

XCVII

callidus, -a, -um.
callid, callidity, callidness.
dulcis, -e.
dulcify, dulcitude.

gauddec, -ère, gavisus sum.
gaud, gaudery, gaudy.

refero, -ferre, rettuli, relatum.
refer, relate, reference, relation, relative, relativity, referendum.
This is an exercise designed to test the extent of your English vocabulary. On the following pages are given certain sentences and expressions. In each case one word is in italics. Following each sentence or expression are five words. In each case select that one of the five words which most nearly corresponds in meaning to the word italicized in the sample sentence or expression. Write the number of the word thus selected in the space at the right. The word to be selected and thus indicated will not always be a close synonym, but it will always correspond nearly to the word in the example. Compound words or words joined by a hyphen count as one word. If you are sure you do not know which word to select, leave the space blank; however, do not be afraid to indicate a word which you think is nearest the meaning required.

**Samples**

A small boy. (1) large (2) tall (3) nice (4) little (5) dear
On the beach. (1) bay (2) harbor (3) shore (4) tide (5) ocean

---

**Directions**

This is an exercise designed to test the extent of your English vocabulary. On the following pages are given certain sentences and expressions. In each case one word is in italics. Following each sentence or expression are five words. In each case select that one of the five words which most nearly corresponds in meaning to the word italicized in the sample sentence or expression. Write the number of the word thus selected in the space at the right. The word to be selected and thus indicated will not always be a close synonym, but it will always correspond nearly to the word in the example. Compound words or words joined by a hyphen count as one word. If you are sure you do not know which word to select, leave the space blank; however, do not be afraid to indicate a word which you think is nearest the meaning required.
Please print:

Name: ____________________________ Date: ____________________________

Last First Middle Age Date of Birth

Yrs. Mos.

School: ____________________________ City: ____________________________ Sex: M. or F.

Title of the English course you are now taking: ____________________________ Instructor: ____________________________

**Directions:** Do not turn this page until you are told to do so. This test consists of 210 items, 30 on each page. A time limit of 30 minutes is suggested. **Answer all the items you can on each page before going on to the next.** Answer the items as they come; be careful not to skip pages. This is not a speed test, and your score does not depend as much on how many items you try to answer as it does on how many you get right on each page you attempt.

On the other hand, the accuracy of your score will be decreased if you spend too much time on any one page. If you don't know the answer to an item after a second reading, go on to the next one. You may answer items even when you are not perfectly sure that your answers are correct, but you should avoid wild guessing, since wrong answers will result in a subtraction from the number of your correct answers.

In each group of words, select the numbered word or phrase which most nearly corresponds in meaning to the word at the head of that group, and put its number in the parentheses at the right.

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**Computation of Score**

<table>
<thead>
<tr>
<th>Number wrong</th>
<th>0</th>
<th>3</th>
<th>7</th>
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<tr>
<td>Amount to be subtracted</td>
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| 4,347 | 51 | 55 | 59 | 63 | 67 | 71 | 75 | 79 | 83 | 87 | 91 | 95 | 99 | 103 | 107 | 111 |
| 40 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 | 82 | 86 | 90 | 94 | 98 | 102 | 106 | 110 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |

| 115 | 119 | 123 | 127 | 131 | 135 | 139 | 143 | 147 | 151 | 155 | 159 | 163 | 167 |
| 118 | 122 | 126 | 130 | 134 | 138 | 142 | 146 | 150 | 154 | 158 | 162 | 166 | + |
| 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 |

Number of completed pages

(A page is considered completed if the last item has been marked or if any items have been marked on subsequent pages. E.g., if the last item marked by a student is Item 30 on Page 5 or Items 1, 2, ..., 29 on Page 6, five pages have been completed.)

Number right (on completed pages only)

Subtract

(Look up in table at left amount to be subtracted corresponding to the number wrong on completed pages)

Raw Score = Difference

**Scaled Score**

(See table on key under column corresponding to number of pages completed)

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15 Amsterdam Avenue, New York, N. Y.
10. inebriation
9. adulation
8. obsession
7. talisman
6. weevil
5. rapier
4. obscurity
3. completion
2. carefulness
1. menu

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3. prescription
2. cork
1. medicine

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3. grave
2. gatekeeper
1. petty thief

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3. meeting
2. charm
1. instrument for

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3. strong objection
2. funeral
1. fixed idea

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3. unfurl
2. craftsman
1. dwarf

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3. billiards
2. hag
1. crone

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3. thick
2. close
1. dwarf

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3. worthy
2. experienced
1. responsible

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3. rack
2. believer
1. unrighteous

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3. grass
2. have
1. explain

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3. utilization
2. heights
1. dwarf

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3. tight
2. wing
1. dwarf

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3. pamplquet
2. revision
1. dwarf

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3. predetermine
2. sign
1. dwarf

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3. important
2. healthful
1. dwarf

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3. critical
2. generous
1. dwarf

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3. generous
2. generous
1. dwarf

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3. unrightful
2. classify
1. dwarf

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3. small
2. unrightful
1. dwarf

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3. break
2. relieve
1. dwarf

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