A brief analysis of the Stanford and Vineland revisions is here attempted in order to indicate a few of the chief points of difference.

A hasty review of the Stanford revised scale gives one the impression that it is much more difficult throughout. The extension of the scale to age 19 1/2 (superior adult) is certainly a commendable advance.

The scale begins at age three and each age contains six tests, in addition to from one to three alternate tests for each year up to age ten. The placing of six tests in each year permits assigning a two months' value to each test. There are no tests for age 11, the only other ages listed being 12, 14, 16, and 18. Since there are no tests for age 11, the eight tests in age 12 are each made to count toward three months mental age, yielding a total value of two years. By this means tests for 14, 16 and 18, six per year, are made to cover without break the range of mental development from 12 to 19 1/2.

The Vineland revision consists of 49 tests for the ages between 3 and 12. Covering the same period in the Stanford revision they number 56, with 13 additional questions which may be used as alternates.

In the following tables the evolution through which the Vineland revision passes is indicated test for test. Tests not in the Vineland (1911) are printed in italics.

Vineland (1911)    Stanford (1915)  Age—Test

Age III.  Test 1—Pointg. eyes, etc....remains...becomes............III-1
          "  2—Rpts. 6 syll.......remains...becomes............III-6
          "  3—Rpts. 2 nos......omitted
          "  4—Enumer. of pic....remains...becomes............III-3
          "  5—Knows name....remains...becomes............III-5

Vineld. IV-1 becomes.....III-4
          "  IV-2 " .....III-2
          "  IV-3 " .....III-A. 1

1 See foot-note, p. 179.

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SAMUEL C. KOHS

VINELAND (1911)  

Age IV. Test 1—Knows sex. shifted to III-4  
   2—Recog. key,  
   etc. . . . . . . “ III-2  
   3—Rpts. 3 nos. “ III-A.1  
   4—Comprs. lines remains becomes . . . . . . . IV-1  

    Klms., Form Discr. = IV-2  
    Vineld. V-4 . . . . . = IV-3  
    “ V-2 . . . . . = IV-4  
    Binet Compr. 1 deg. . . . . = IV-5  
    Stanfd. 4 digits . . . . . . . = IV-6  
    Vineld. V-3 . . . . . . . . . = IV-A.1

Age V. Test 1—Compares wts. remains becomes . . . . . . . . . . . . . V-1  
   2—Copies sq. . . shifted to IV-4  
   3—Rpts. 11 syll. “IV-A.1  
   4—Counts 4c. . . “ IV-3  
   5—“Patience” remains becomes . . . . . . . V-5

    Vineld. VII-5 . . . . = V-2  
    “ VI-5 . . . . = V-3  
    “ VI-2 . . . . = V-4  
    “ VI-7 . . . . = V-6  
    Binet, age . . . . . . . . . . . = V-A.1

Age VI. Test 1—A. M.–P. M. remains becomes . . . . . . . . . . . . VI-A.1  
   2—Definit’ns, use . . shifted to V-4  
   3—3 direct’ns . . . . “ V-6  
   4—R. hand, L. ear remains becomes . . . . . . . VI-1

    Vineld. VII-3 . . . . = VI-2  
    “ VII-1 . . . . = VI-3  
    “ X-4 (1st ser.). = VI-4  
    “ X-1 (part) . . . . = VI-5  
    Stanfd. 16-18 syll. . . . VI-6

Age VII. Test 1—Counts 13c. . . shifted to VI-3  
   2—Descr. pic. . . . . . . remains becomes . . . . . . . VII-2  
   3—Unfin. pic. . . shifted to VI-2  
   4—Copies Diamd. remains becomes . . . . . . . VII-6

    Binet, fingers . . . . . . = VII-1  
    Vineld. VIII-5 . . . . = VII-7  
    Stanfd. bow-knot . . . . . . = VII-4  
    Vineld. VIII-1 . . . . = VII-5  
    “ VIII-3 . . . . = VII-A.1  
    Stanfd. rpt. 3 no. bkwd. = VII-A.2
### REVISIONS OF THE BINET SCALE

**Vineland (1911)**

**Stanford (1915)**

<table>
<thead>
<tr>
<th>Age VIII.</th>
<th>Test 1—Differences. shifted to VII-5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot; 2—20-I, bkwd.. remains.. becomes... . . VIII-2</td>
</tr>
<tr>
<td></td>
<td>&quot; 3—Rpts. days, shifted to VII-A. 1</td>
</tr>
<tr>
<td></td>
<td>&quot; 4—Counts stamps, shifted to IX-A. 2</td>
</tr>
<tr>
<td></td>
<td>&quot; 5—Rpts. 5 nos., shifted to VII-3</td>
</tr>
<tr>
<td></td>
<td><strong>Stanfd. ball-fld.</strong> = VIII-1</td>
</tr>
<tr>
<td></td>
<td>Vineld. X-4 (2d. sr.).. = VIII-3</td>
</tr>
<tr>
<td></td>
<td>Binet, similar. = VIII-4</td>
</tr>
<tr>
<td></td>
<td>Vineld. IX-2........ = VIII-5</td>
</tr>
<tr>
<td></td>
<td><strong>Stanfd. vocab. 20.</strong> = VIII-6</td>
</tr>
<tr>
<td></td>
<td>Vineld. X-1 (part). = VIII-A. 1</td>
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<tr>
<td></td>
<td><strong>Binet, dictation.</strong> = VIII-A. 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age IX.</th>
<th>Test 1—Change 20-4. remains.. becomes... . . . IX-3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot; 2—Superior def.. shifted to VIII-5</td>
</tr>
<tr>
<td></td>
<td>&quot; 3—Date. remains.. becomes... . . IX-1</td>
</tr>
<tr>
<td></td>
<td>&quot; 4—Months. &quot; &quot; &quot; &quot; &quot; &quot; &quot; IX-A. 1</td>
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<tr>
<td></td>
<td>&quot; 5—Arrange wts. &quot; &quot; &quot; &quot; &quot; &quot; &quot; IX-2</td>
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<td></td>
<td><strong>Stan. rpt. 4 no. bkwd.</strong> = IX-4</td>
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<tr>
<td></td>
<td>Vineld. X-5........ = IX-5</td>
</tr>
<tr>
<td></td>
<td>&quot; XI-4........ = IX-6</td>
</tr>
<tr>
<td></td>
<td>&quot; VIII-4........ = IX-A. 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age X.</th>
<th>Test 1—Money (part). shifted to VI-5</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>shifed to VIII-A. 1</td>
</tr>
<tr>
<td></td>
<td>(part). omitted</td>
</tr>
<tr>
<td></td>
<td>&quot; 2—Design. remains.. becomes... . . X-3</td>
</tr>
<tr>
<td></td>
<td>&quot; 3—Rpts. 6 nos. &quot; &quot; &quot; &quot; &quot; &quot; &quot; X-A. 1</td>
</tr>
<tr>
<td></td>
<td>&quot; 4—Comprin. 1st. ser., pt. 2nd. ser., shifted to VI-4</td>
</tr>
<tr>
<td></td>
<td>pt. 2nd. ser. remains.. becomes... . . X-5</td>
</tr>
<tr>
<td></td>
<td>&quot; 5—Sentence....shifted to IX-5</td>
</tr>
<tr>
<td></td>
<td><strong>Stanfd. vocab. 30.</strong> = X-1</td>
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<tr>
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<td>Vineld. XI-1. = X-2</td>
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<tr>
<td></td>
<td><strong>Binet, 8 memor.</strong> = X-4</td>
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<tr>
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<td>Vineld. XI-3. = X-5</td>
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<tr>
<td></td>
<td>&quot; XII-3........ = X-A. 2</td>
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<tr>
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<td><strong>Healy Constr. Pue.</strong> = X-A. 3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Age XI.</th>
<th>Test 1—Absurdity... shifted to X-2</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>&quot; 2—Simple sent. &quot; &quot; &quot; IX-5</td>
</tr>
<tr>
<td></td>
<td>&quot; 3—60 wds.... &quot; &quot; &quot; X-6</td>
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<tr>
<td></td>
<td>&quot; 4—Rhymes..... &quot; &quot; &quot; IX-6</td>
</tr>
<tr>
<td></td>
<td>&quot; 5—Dissected sent. &quot; &quot; &quot; XII-4</td>
</tr>
</tbody>
</table>

No XI
SAMUEL C. KOHS

VINELAND (1911)                                STANFORD (1915)

Age XII. Test 1—Rpts. 7 nos., shifted to XIV-A. 1
" 2—Abstract def. remains, becomes threatened.
" 3—Rpts. 23 syll., shifted to X-A. 2
" 4—Line suggests, omitted
" 5—Problems shifted to XIV-4

Stanfd. vocab. 40... = XII-1
" bal-fld. sup. = XII-3
Vineld. XI-5... = XII-4
Stanfd. fables... = XII-5
" rpt. 5 no. bk... = XII-6
Vineld. XV-I... = XII-7
Stanfd. sim. 3 thgs... = XII-8

Age XIV.

Stanfd. vocab. 50... = XIV-1
" induct. test... = XIV-2
Vineld. Adult-4... = XIV-3
" XII-5... = XIV-4
Stanfd. arith. prob... = XIV-5
Vineld. XV-2... = XIV-6
" XII-I... = XIV-A. 1

No Tests FOR XIV

Age XV. Test 1—Interp. pic. shifted to XII-7
" 2—Clock hands " " XIV-6
" 3—Code... " " XVI-6
" 4—Opposites... omitted

No Tests FOR XV

Age XVI. (Average Adult)

Test 1—Ctg. paper... shifted to XVIII-2
" 2—Reversed triang... omitted
Vineld. XV-3... = XVI-6
" 3—Diff. abstr. wds. shifted to XVI-3
Stanfd. encld. boxes... = XVI-4
" rep. 6 no. bk... = XVI-5
Vineld. XV-2... = XVI-6
" comp. phys. rel. = XVI-A. 2

Adult

Test 1—Ctg. paper... shifted to XVIII-2
" 2—Reversed triang... omitted
Stanfd. rep. 28 syll... = XVI-A. 1
" 3—Diff. abstr. wds. shifted to XVI-3
" 4—Diff. pres. kg. shifted to XIV-3

Age XVIII. (Superior Adult)

Stanfd. vocab. 75... = XVIII-1
Vineld. Adult-1... = XVIII-2
Stanfd. rep. 8 no... = XVIII-3
Vineld. Adult-5... = XVIII-4
Stanfd. rep. 7 no. bk... = XVIII-5
" ingen. test... = XVIII-6

Summarizing the above tables:

In age 3, four tests remain and one is omitted.
In age 4, one test remains and three are shifted to an earlier age, being too easy for four-year-olds.
In age 5, two tests remain and three are shifted to age 4, being too easy for children of five.
In age 6, two tests remain and three are shifted to age 5.
In age 7, two tests remain, two are shifted to age 6, and one to age 5.
In age 8, one test remains, three are shifted to age 7, and one to age 9.
In age 9, four tests remain and one is shifted to age 8.
In age 10, two tests and a portion of a third remains, one test is shifted to age 9, one part each of two tests is shifted to age 6, and one part each of two tests is shifted to age 8.
In age 11, all the tests are shifted, there being no corresponding 11-year group in the Stanford revision: two are shifted to age 9, two to age 10, and one to age 12.
In age 12, one test remains, one is omitted, and three are shifted: one to age 10, and two to age 14.
In age 15, one test is omitted and the other three are shifted as follows: one to age 12, one to age 14, and one to age 16.
Of the "Adult" tests, one is omitted, one becomes a test for age 14, one a test for age 16, and two are tests in age 18.
The above changes are indicated in the following table:

<table>
<thead>
<tr>
<th>Age</th>
<th>No Change</th>
<th>Omitted</th>
<th>Shifted Early</th>
<th>Shifted Later</th>
<th>Total</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1 2 3 4</td>
<td></td>
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<tr>
<td>3</td>
<td>4</td>
<td>1</td>
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<td>4</td>
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<td>1</td>
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<td>15</td>
<td>3</td>
<td>1</td>
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</tr>
<tr>
<td>Adult</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Total....... 22 1/2  4 1/2 19 5 1/2 1 1 3 2 58
Percent....... 38.5  7.5 32.8 9.8 1.7 1.1 5.2 3.4 100.0

1 (16-18)?

It will be observed that between 3 and 7 years twelve tests have been removed to earlier years, and no tests to later years.
These changes will dispose of the criticism that the lower end of the scale is too easy. But between 8 and 12 years 14\frac{3}{4} tests have been removed to earlier years, and only five tests to later years, thus making the scale still more difficult at its upper end.\(^1\)

38.5 percent of the scale remains unchanged. 7.5 percent of the tests in the Vineland revision are omitted. 45.4 percent of the tests are found too easy for their respective ages and are shifted to earlier years, 32.8 percent being placed in the next earlier age. 7.6 percent of the tests are found too difficult for their respective ages and are consequently placed in later years.

No test is placed more than four years below its original position. No test is placed more than two years above its original position.

It might be well to keep in mind that the tests appearing only in the Stanford revision have not been considered in the above tabulation and in the summarization of the test data. For that reason some of the statements made need not be regarded as seriously critical.

Using the Stanford revision, Terman and his collaborators found that (a) by using the intelligence quotient one can transform the ‘age grade scale’ into a ‘point scale’ automatically, should one prefer expressing the development of intelligence in that manner. “As such it would seem to be greatly superior to the Yerkes-Bridges scale, for it includes a much larger number of tests and its points have definite meaning and equal value.” (b) Sex-differences are found to be so small as to be negligible for practical purposes. (c) The younger the children the greater the influence of social status on intelligence.

The Stanford revision is to be welcomed in its effort toward a scale free from those objections which are still being quixotically hurled against it.

Samuel C. Kohs

Stanford University

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\(^1\) The following article, however, “L. M. Terman and H. E. Knollin: Some Problems Relating to the Detection of Borderline Cases of Mental Deficiency” J. Psycho-Asthen. 1915, 20: 1–15, coming to the notice of the writer after the above was in type, shows the reverse to be true. Tabulating the reactions of borderline subjects (mental ages by the Stanford Revision between 12 and 14, —104 adults) they found that by the Vineland Revision, weighted for tests above 12, the median age for these subjects was reduced as much as one and one-half years, and with the tests unweighted the reduction was greater, namely two years. It ought also be mentioned, in this connection, that the procedure and scoring of quite a number of tests have been changed in the Stanford Revision. Consequently a strict analysis of test displacement must take these facts into consideration. Change of procedure or scoring may so modify the statistical data obtained for a test as to warrant its transfer to some lower year without necessarily increasing the difficulty of the scale at that particular point.