

**Ourselves : a personal and family history register for preserving records of a private and personal nature for one married couple and their children also an appendix--offering remarks and hints on the subject of development of children--of mind, body, character and personality / by John Madison Taylor.**

### **Contributors**

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OURSELVES  
A PERSONAL AND FAMILY  
HISTORY REGISTER  
BY  
J. MADISON TAYLOR, A.B. M.D.

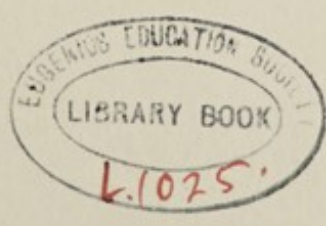




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OURSELVES  
A PERSONAL AND FAMILY  
HISTORY REGISTER

FOR PRESERVING  
Records of a Private and Personal Nature  
FOR ONE MARRIED COUPLE AND  
THEIR CHILDREN

ALSO

An APPENDIX—Offering Remarks and Hints on the Subject of  
DEVELOPMENT OF CHILDREN—OF MIND, BODY, CHARACTER  
AND PERSONALITY

BY

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**U**rselves

BEING A CHRONICLE OF PERSONAL PROGRESS AND  
HAPPENINGS IN THE LIVES OF

Mr. .... (full name) and his wife,

Mrs. ....; (maiden name) .....

## THEIR CHILDREN

(Inscribe Here Full Name of Each Child in Order of Birth:)

ARRANGED IN ACCORD WITH


## Scientific Findings and Expert Methods for Preserving the Observations of

## INTELLIGENT PARENTS

On the Unfolding of the Self of Each Parent and Child, its Development,  
Growth, and Characteristics. Also a Record of Their Genealogy and  
of All Important Facts, Memorable Events, Incidents, etc.,  
Pertaining to Progress Through the Years,

### Including Pleasing and Unfortunate Incidents, Hurts and the Like





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## AN APPRECIATION

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L. C. B.

Who contributed materially to whatever success may crown  
long-continued laborious efforts



## Key to Pages

Title Page.

Index to Names, including record of births, marriages, deaths; also page reference to other entries.

Diagram of Ancestors of Father to 7th generation.

Register of Ancestors of Father (the numbers corresponding to those on Diagram).

Diagram of Ancestors of Mother to 7th generation.

Register of Ancestors of Mother (the numbers corresponding to those on Diagram).

Introduction.

Explanatory Text, giving specific directions how to use the Blanks.

Personal Histories of Health, of individuals over one year of age.

Blanks for Phenomena of an Attack of Illness, Injury, or operation, if, or when, such should occur.

Blanks for Baby Record: brief memoranda of circumstances of birth, growth, development, etc., physical and mental, up to one year.

Table of Standard Weights and Heights and Circumference of Head and Chest (from L. Emmett Holt).

Charts for Recording Weight and Height.

Blanks for Record of Weights at Five-year Intervals.

Blanks for Observations and Findings of Specialists, in eye, ear, throat, and nose.

Blanks for Clinical Laboratory Findings: urine, feces, blood, etc.

Anatomical Diagrams, to record site, size and character of lesions, deformities, etc.

Diagrams for Findings of Dental Surgeons: development, condition, repairs made, etc., of teeth.

Pages for Special Happenings: noteworthy incidents, education, tastes, distinctions, etc.; all facts bearing on the evolution of personality and character. Also to be used as a supplement to the other Blanks.

Pages for Photographs, at different ages, with dates.

Pages for Handwriting, at different ages, with dates.

Index of Chapters on Development of Body, Mind, Character, and Personality.

1. The Child as a Problem for Parents and Others.

General Remarks on Infants and Children in and out of Health.

2. The Building of a Citizen.

3. How Far can Improved Conditions of Life Overcome Inherited Tendencies?

Euthenics: the Science of Increasing Efficiency in the Individual by Improving Environment.

4. Personal Hygiene.

5. Hints and Warnings in the Bringing Up of Children.

6. Age and Age Values.

7. Genesis of Language.

8. Development of the Mind.

9. The Senses, Perceptions, Feelings, Emotions.

10. Training of the Movements (Motor Education).

11. Causes of Sudden Death in Infants and Children.

## Index of Names

Also Dates of Births, Marriages, Deaths; also Page Reference to Any Other Entries

Name (Father) ..... Born ..... Place .....

Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name (Mother) ..... Born ..... Place .....

Died . . . . . " . . . . .

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name (Child) ..... Born ..... Place .....

Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name ..... Born ..... Place .....

\* Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name ..... Born ..... Place .....

Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Born ..... Place .....

\*Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Born ..... Place .....

\*Died ..... “ .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name ..... Born ..... Place .....

Died ..... " .....

Married to ..... Date ..... Place .....

See also entries on page under same name.

Name ..... Born ..... Place .....

Died ..... “ .....

Married to ..... Date ..... Place .....

See also entries on page under same name.



Name ..... Born ..... Place .....  
Died ..... " .....  
Married to ..... Date ..... Place .....

See also entries on page under same name.

Name ..... Born ..... Place .....  
Died ..... " .....  
Married to ..... Date ..... Place .....

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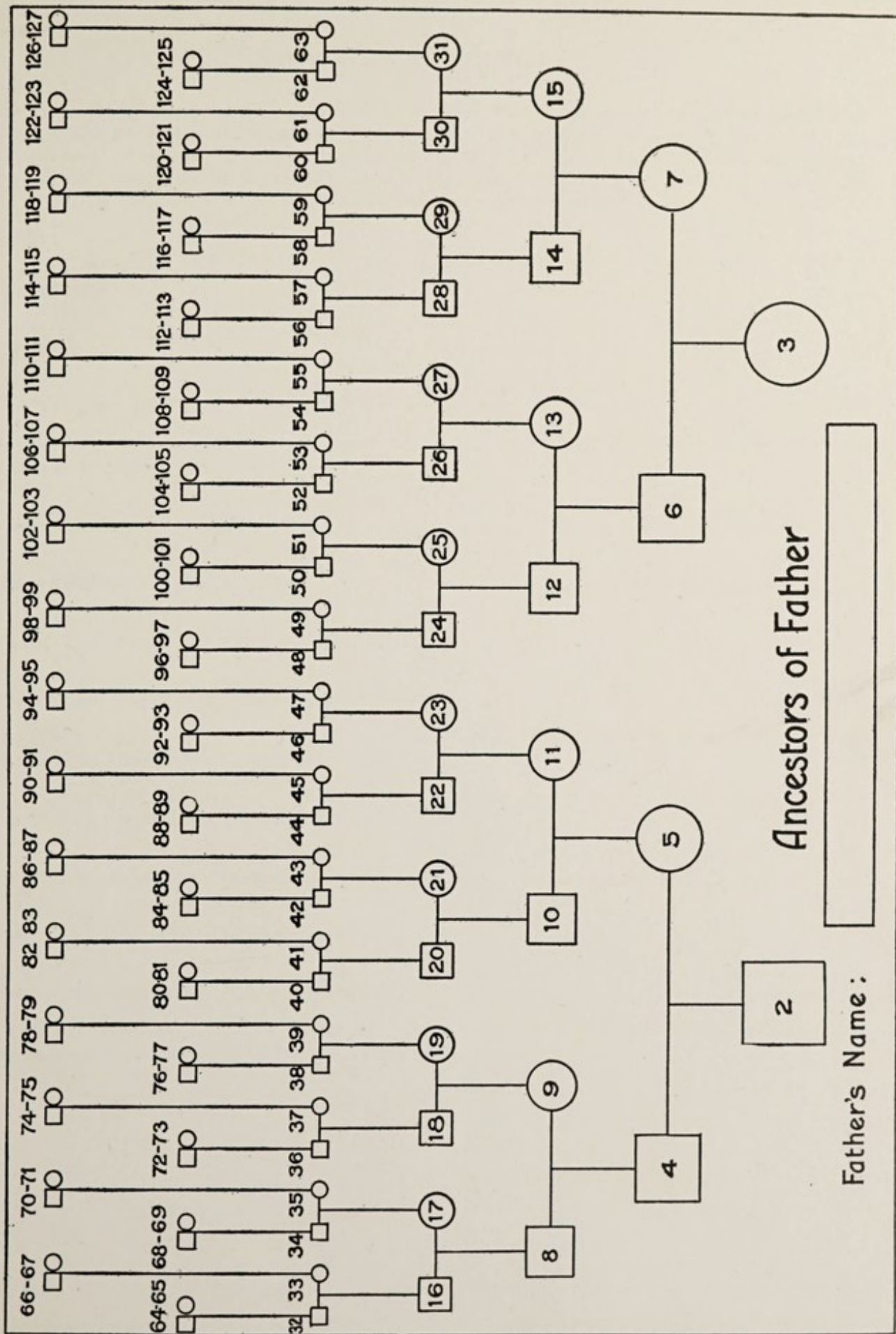
Name ..... Born ..... Place .....  
Died ..... " .....  
Married to ..... Date ..... Place .....

See also entries on page under same name.



# DIAGRAM OF ANCESTORS OF FATHER

The position of each individual in the line of ascent is indicated by a *square* for a male and *circle* for a female.  
Each contains a *number*; these numbers correspond to a *number* on the accompanying REGISTER OF ANCESTORS OF FATHER.





## Ancestors of Father

This register is for direct ancestors (ascendants) of father. Facts as to causes of death and special characteristics will also prove of great importance. Additional data, such as names, dates, places, etc., of birth and death of collaterals (uncles, aunts, cousins, etc.), can be inscribed on a page marked "Special Happenings." (Numbers should correspond with those on the chart.) F. stands for Father's or Father; M. stands for Mother's or Mother; *e.g.*, F. F. F. M. is for Father's Father's Father's Mother.

1. Father	Born .....	Died .....
2. Father's Father	" .....	" .....
3. Father's Mother	" .....	" .....
4. Father's Grandfather (Father's side)	" .....	" .....
5. Father's Grandmother (Father's side)	" .....	" .....
6. Father's Grandfather (Mother's side)	" .....	" .....
7. Father's Grandmother (Mother's side)	" .....	" .....
8. Father's Great Grandfather (Father's side)	" .....	" .....
9. Father's Great Grandmother (Father's side)	" .....	" .....
10. Father's Great Grandfather (Grandmother's side)	" .....	" .....
11. Father's Great Grandmother (Grandmother's side)	" .....	" .....
12. Father's Great Grandfather (Grandmother's side)	" .....	" .....
13. Father's Great Grandmother (Grandmother's side)	" .....	" .....
14. Father's Great Grandfather (Grandmother's side)	" .....	" .....
15. Father's Great Grandmother (Grandmother's side)	" .....	" .....
16. F. F. F. F. F.	" .....	" .....
17. F. F. F. F. M.	" .....	" .....
18. F. F. F. M. F.	" .....	" .....
19. F. F. F. M. M.	" .....	" .....



20. F. F. M. F. F.

..... Born ..... Died .....

21. F. F. M. F. M.

..... " ..... " .....

22. F. F. M. M. F.

..... " ..... " .....

23. F. F. M. M. M.

..... " ..... " .....

24. F. M. F. F. F.

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25. F. M. F. F. M.

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26. F. M. F. M. F.

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29. F. M. M. F. M.

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30. F. M. M. M. F.

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31. F. M. M. M. M.

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32. F. F. F. F. F. F.

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33. F. F. F. F. F. M.

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34. F. F. F. F. M. F.

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35. F. F. F. F. M. M.

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36. F. F. F. M. F. F.

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37. F. F. F. M. F. M.

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38. F. F. F. M. M. F.

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39. F. F. F. M. M. M.

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40. F. F. M. F. F. F.

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41. F. F. M. F. F. M.

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42. F. F. M. F. M. F.

..... Born ..... Died .....

43. F. F. M. F. M. M.

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44. F. F. M. M. F. F.

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45. F. F. M. M. F. M.

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46. F. F. M. M. M. F.

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59. F. M. M. F. M. M.

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60. F. M. M. M. F. F.

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61. F. M. M. M. F. M.

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62. F. M. M. M. M. F.

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63. F. M. M. M. M. M.

..... " ..... " .....

64. F. F. F. F. F. F. F.

..... Born ..... Died .....

65. F. F. F. F. F. F. M.

..... " ..... " .....

66. F. F. F. F. F. M. F.

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67. F. F. F. F. F. M. M.

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68. F. F. F. F. M. F. F.

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69. F. F. F. F. M. F. M.

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70. F. F. F. F. M. M. F.

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71. F. F. F. F. M. M. M.

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72. F. F. F. M. F. F. F.

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73. F. F. F. M. F. F. M.

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74. F. F. F. M. F. M. F.

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75. F. F. F. M. F. M. M.

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76. F. F. F. M. M. F. F.

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77. F. F. F. M. M. F. M.

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78. F. F. F. M. M. M. F.

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79. F. F. F. M. M. M. M.

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80. F. F. M. F. F. F. F.

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81. F. F. M. F. F. F. M.

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82. F. F. M. F. F. M. F.

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83. F. F. M. F. F. F. M.

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84. F. F. M. F. M. F. F.

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85. F. F. M. F. M. F. M.

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86. F. F. M. F. M. M. F.

..... Born ..... Died .....

87. F. F. M. F. M. M. M.

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88. F. F. M. M. F. F. F.

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89. F. F. M. M. F. F. M.

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90. F. F. M. M. F. M. F.

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96. F. M. F. F. F. F. F.

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97. F. M. F. F. F. F. M.

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98. F. M. F. F. F. M. F.

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99. F. M. F. F. F. M. M.

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100. F. M. F. F. M. F. F.

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101. F. M. F. F. M. F. M.

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102. F. M. F. F. M. M. F.

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103. F. M. F. F. M. M. M.

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104. F. M. F. M. F. F. F.

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105. F. M. F. M. F. F. M.

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106. F. M. F. M. F. M. F.

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107. F. M. F. M. F. M. M.

..... " ..... " .....

108. F. M. F. M. M. F. F.

..... Born ..... Died .....

109. F. M. F. M. M. F. M.

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110. F. M. F. M. M. M. F.

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111. F. M. F. M. M. M. M.

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112. F. M. M. F. F. F. F.

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113. F. M. M. F. F. F. M.

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114. F. M. M. F. F. M. F.

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115. F. M. M. F. F. M. M.

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116. F. M. M. F. M. F. F.

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118. F. M. M. F. M. M. F.

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120. F. M. M. M. F. F. F.

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121. F. M. M. M. F. F. M.

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122. F. M. M. M. F. M. F.

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123. F. M. M. M. F. M. M.

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124. F. M. M. M. M. F. F.

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125. F. M. M. M. M. F. M.

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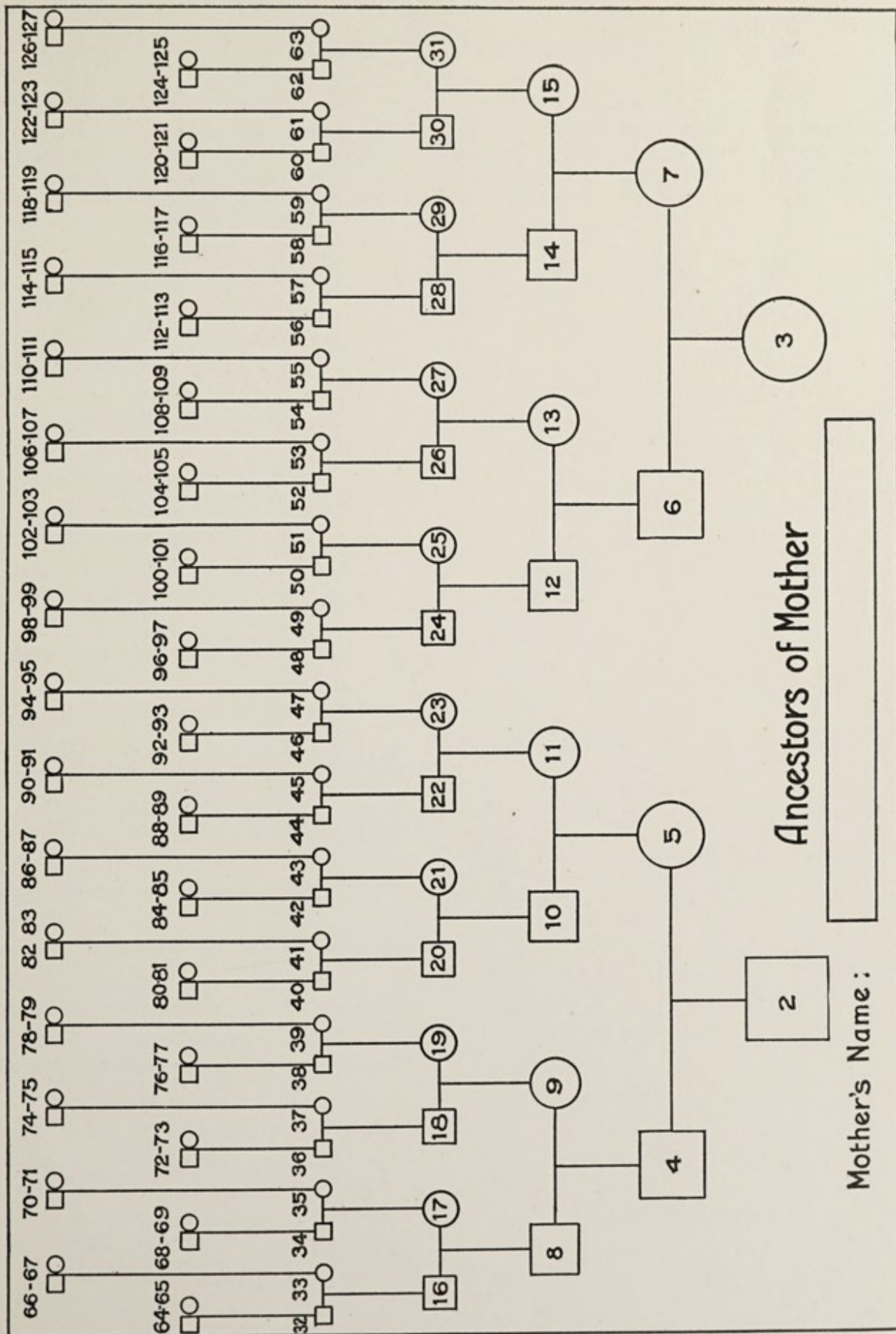
..... " ..... " .....



### DIAGRAM OF ANCESTORS OF MOTHER

The position of each individual in the line of ascent is indicated by a *square* for a male and a *circle* for a female.

Each contains a *number*; these numbers correspond with a *number* on the accompanying REGISTER OF ANCESTORS OF MOTHER.







# Ancestors of Mother

Name previous to marriage .....

This register is for direct ancestors (ascendants) of mother. Facts as to causes of death and special characteristics will also prove of great importance. Additional data, such as names, dates, places, etc., of birth and death of collaterals (uncles, aunts, cousins, etc.), can be inscribed on a page marked "Special Happenings." (Numbers should correspond with those on the chart.) M. stands for Mother's or Mother; *e.g.*, M. F. F. M. is for Mother's Father's Father's Mother.

1. Mother	.....	Born	.....	Died	.....
2. Mother's Father	.....	"	.....	"	.....
3. Mother's Mother	.....	"	.....	"	.....
4. Mother's Grandfather (Father's side)	.....	"	.....	"	.....
5. Mother's Grandmother (Father's side)	.....	"	.....	"	.....
6. Mother's Grandfather (Mother's side)	.....	"	.....	"	.....
7. Mother's Grandmother (Mother's side)	.....	"	.....	"	.....
8. Mother's Great Grandfather (Father's side)	.....	"	.....	"	.....
9. Mother's Great Grandmother (Father's side)	.....	"	.....	"	.....
10. Mother's Great Grandfather (Grandmother's side)	.....	"	.....	"	.....
11. Mother's Great Grandmother (Grandmother's side)	.....	"	.....	"	.....
12. Mother's Great Grandfather (Grandmother's side)	.....	"	.....	"	.....
13. Mother's Great Grandmother (Grandmother's side)	.....	"	.....	"	.....
14. Mother's Great Grandfather (Grandmother's side)	.....	"	.....	"	.....
15. Mother's Great Grandmother (Grandmother's side)	.....	"	.....	"	.....
16. M. F. F. F. F.	.....	"	.....	"	.....
17. M. F. F. F. M.	.....	"	.....	"	.....
18. M. F. F. M. F.	.....	"	.....	"	.....
19. M. F. F. M. M.	.....	"	.....	"	.....

20. M. F. M. F. F.

..... Born ..... Died .....

21. M. F. M. F. M.

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22. M. F. M. M. F.

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40. M. F. M. F. F. F.

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41. M. F. M. F. F. M.

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42. M. F. M. F. M. F.

..... Born ..... Died .....

43. M. F. M. F. M. M.

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44. M. F. M. M. F. F.

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63. M. M. M. M. M. M.

..... " ..... " .....

64. M. F. F. F. F. F. F.

..... Born ..... Died .....

65. M. F. F. F. F. F. M.

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66. M. F. F. F. M. F.

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## Introduction

The Personal History Register "Myself" and the Family "Ourselves" are designed to afford means of assembling all the important facts in the history of one person or one family: of father, mother, and their children. The Personal Register "Myself" is intended to be filled in by the parents with facts from birth to adulthood, and to become that person's private property. As to the Family History "Ourselves," when one or other of the children marry, the pair should begin another register. When completed, the book should be deposited with some trustworthy guardian, where it can be consulted by those having right of access.<sup>1</sup>

Records such as these, made with care while the facts are fresh in mind, form an invaluable basis for the determination of many vital questions in domestic economics. Heretofore, no such adequate, uniform, systematic means has been provided.<sup>2</sup>

Among the facts which all experience shows to be necessary for preservation, are those bearing on questions of genealogy, inheritance of family and personal traits, peculiarities which appear or disappear; dates of birth, marriage, and death; incidents and observations on development of mind and body, in and out of health; precise records of phenomena of growth, variations in psycho-physical progress, leading up toward a full knowledge of the individual, through all accessible antecedent occurrences, familial and personal, contributing to the evolution and fruition of personality, achievement and character.

Thus a cycle is formed and a point reached where the younger ones assume the position of parenthood, and another home cycle is begun.

This completed group of facts, when assembled and interpreted aright, cannot fail to contribute efficiently to conservation in at least three domains:—

- (a) The family as a unit;
- (b) The individual as a citizen, a member of the Commonwealth, and
- (c) The betterment of the race as a whole.

The family is regarded by social and political economists as the unit of citizenship even more definitely than the individual. The domestic group develops a character all its own, as distinctive, perhaps more so, than that of the individual. Striking similarities or differences between individuals (family traits) are deeply significant, and should not be neglected.

Peculiarities of structure, shape, proportion, posture, attitude, coloring in hair, eyes, skin; shape of ears, nose,

lips; evolution of teeth; peculiarities of joints, genitalia, of vigor or weakness; resistance or susceptibility to harmful agencies; idiosyncrasies of movement (quick or slow, accurate or clumsy, etc.), behavior, speech, tastes, appetites, capacities, serenity or irritability, laziness, apathy or energy, and the like, all indicate family trends and give evidence of the commingling of forces arising far up the line of ancestry. They indicate plainly what, and how, forces should be encouraged and what, and how, restrained; what weaknesses need strengthening; what forces controlled; what diseases are likely to occur and their probable severity; and finally, what sort of mates should be chosen in order to secure happiness and a lasting betterment for posterity.

It is obvious that a clear and full knowledge of specific tendencies will prove of the utmost assistance to those on whom responsibility rests, among whom are parents, teachers, guardians, physicians, clergymen, employers, trustees, etc.

To insure integrity of the records, it is advisable that in forming the antecedent histories of those over one year of age, the material should be collected from all accessible sources, compiled in gross, carefully verified, edited, abstracted and inscribed.<sup>3</sup> (See "Hints How to Use the Record Blanks.")

Entries of occurrences, such as "Baby Records," "Histories of Illness, Injury, or Operation," and the like, should be made while fresh and clear in the mind. The best person to do this is a parent, with the advice and assistance of a physician. These need not be untidily elaborate; they are better when succinct and exact.

Blanks are provided for observations and findings of medical and surgical specialists. Such records of fact are of direct economic value in noting comparisons at different periods, and also indirect to enable succeeding advisers to have access to exact records of verified facts.<sup>4</sup>

Duty to the welfare of the family is a high and sacred trust; duty of the individual to himself is generally admitted as primary and paramount. There is, however, a loftier and more binding duty (as yet but dimly realized) which overtops all others, viz.: *our duty to the future integrity of the race.*

It is gratifying to those who earn happiness in devising means for the uplift of mankind, to note the

<sup>1</sup> For the best interests of those immediately concerned, and also in the interests of science, it will be wise to leave completed books in the final keeping of the Eugenics Record Office. See note by C. B. Davenport, at end of the Introduction.

<sup>2</sup> The author has consulted all available works having this purpose, and they are unsatisfactory. This Register comprises the best points of all, with many new ones added.

<sup>3</sup> These sources of information are, among others, "Family Bibles," or any home records, those of schools and churches, legal documents, wills, property transfers, correspondence, notes of physicians, of hospitals, etc.

<sup>4</sup> To select only one illustration for emphasis: a precise register of the varying conditions of the teeth may enable a dental surgeon not only to save a valuable tooth, but to forewarn a weakened organism from serious constitutional disorders; e.g., errors in growth, malformation, impactions, non-sensory abscesses, all of which modern science has shown to be of hitherto unsuspected capability for disorganization of both body and mind.



enormous, increasing interest shown in the subject of parenthood and race culture.

Problems of unrest, ever with us and urgently demanding solution, reach into the very heart of an awakening human conscience. The core of morality is eugenics, the manifestation of the supreme law of love, the ideal of familial and social conservation.

Religion is the binding of one's self, one's best endeavor, to the fountain-sources of goodness and power. The exaltation of human worth, the subordination of all shams, artificialities, destructive ambitions, and the raising of one's self to the closest intimacy and enfoldment into the Divine, constitute a part, a vital part, of religion. No agency serves this ideal of world-religion more faithfully or sincerely than the purposes of attention to the improvement of the individual and the race.

The religion of the future must exhibit this devotion to the highest survival and developmental race values, nature's unvarying struggle or desire for the fullness of life.

Eugenics (race betterment) may accomplish little in the next few generations. The seeds of interest planted by her proponents, acting cautiously, earnestly and scientifically, will, however, serve to form opinion, will develop a human conscience merging into the Divine; will act as an efficient guide to the glory of coming generations, whereby the selection of fit mates will be instinctively achieved.

Mankind must, and will, learn to acquire a clear and efficient self-knowledge, an understanding of the points of strength and weakness in our mental, moral and bodily (psycho-physical) make-up.

Only through a knowledge of the family can we learn the tendencies of the individual. Only in the light of family traits do we determine what environment can and will best serve to modify growth; to prevent or minimize evil tendencies, developmental arrests or defects; to estimate susceptibility to certain influences or diseases, to apply preventive or curative measures adapted to particular conditions and instances.

The most effective way to serve the aims of eugenics (race betterment) is for parents to make careful observations of children, especially the very young, comparing the later with the earlier findings, and securing a long perspective on growth forces and values. Some parents may become overanxious, magnifying unduly certain indications; others, overoptimistic, may disregard significant occurrences, assuming that a Divine agency will guide progress safely and divert hurtful agencies. Between these two extremes the wise will steer. A safe course is to note frankly and fully whatever appears, chronologically, with date and circumstance, revising from time to time, and finally condensing the findings and inscribing them in this Register.

An invaluable aid is the thoughtful physician, one who is permitted the privilege of watching the family in and out of health. Some few, rare clergymen may be of help, especially those who have had such inestimable

advantages as a training in biology, psychology, or social service. The modern mother often finds herself so overburdened with important duties that she has little time for making observations and notes on the phenomena of growth and peculiarities. Some mothers, who would resent the imputation of neglecting parental duties yet allow social claims to become increasingly absorbing, might, at least, give far less energy to the conservation of the nursery than seems right to professional conservators of health.

We would go a step further and beg attention to the desirability of selecting suitable parents for children. The only way whereby good children can be born is for both parents to be reasonably free from inherited, or inheritable, defects, and from diseases transmissible to offspring. It is demanding little enough for the father and mother to be free from infections. Surgeons are kept busy removing tubes and ovaries in women infected by husbands uncured of gonorrhea before marriage. Life-long invalidism in women is only too commonly due to neglect of such paramount precautions. Also there are other diseases capable of leaving dire effects on progeny: lues, tuberculosis, constitutional disorders, blood degenerations, also states of exhaustion. Delay of marriage till such hindrances are overcome is a sacred duty; a reasonable condition to demand.

The old family physician "knew the constitutions" of his families. To be sure, his professional knowledge was an indefinite, empirical "rule-of-thumb" sort of equipment. He got good results, however, from the very amplitude of his awareness and intimacy of his attention.

*The use of this History Register* will render it both possible and easy to collect an immense body of concrete and significant information, capable of supplying in accurate, available form, what the close association of many experts in various lines could not so well accomplish without it.

It will furnish a kind and degree of self-knowledge, especially of one's psycho-physical make-up, possibilities, peculiarities, shortcomings, and the like, greatly enlightening both the principal and his or her advisers directly related to the family, blood relatives, and others.

A fuller understanding of ourselves leads to clearer understanding of others; hence to greater justice, kindness, sympathy, tolerance, broad-mindedness, and to saner estimates of trivialities. To "know thyself" is a primal requisite in knowing others.

It is worth much to be understood by others. A well-rounded knowledge of ourselves contributes to a better comprehension of the factors of environment, to a choice of personal direction for effort, to an appreciation of preventive and corrective measures, above all of the delinquency, dependency, defectiveness about us. It will make us better citizens, better parents. Hence we can, and will, train our children better; give them clearer viewpoints, sounder and saner attitudes toward life and humanity. Upon our children and children's



children depend the happiness and progress of the nation and the race.

*The keeping of the Register* need not demand too much time and effort of the busy householder. The author fully appreciates the unending, immeasurable demands on strength. *A few moments of attention in each month or two will usually suffice.* Anything worth doing

—and this is a thing absolutely essential to be done—is worth doing well and regularly. Every family must keep accounts of expenditures and receipts. Can there be any comparison between the desirability, the economic duty, of keeping accounts (records) of growth, development, illness, of expanding intelligence, interests and achievements—and of keeping an account of mere dollars?

## THE LIFE EXTENSION INSTITUTE, Incorporated,

is "designed as a self-supporting public service, to disseminate and apply knowledge of the science of disease prevention; to provide periodic health examinations for individuals directly, and for insurance companies, employers and other organizations that disease may be detected in its incipiency when it can be checked or cured."

"Persons who desire a full physical examination, either supplementary to or independent of the Personal or Family Record, are cordially recommended to apply to

the Life Extension Institute, Inc., 25 West 45th St., New York, N. Y., which can furnish such service at a moderate cost in any section of the country. Outside the limits of New York City and vicinity examinations are made by special representatives of the Institute. Those physicians best equipped in each locality are supplied with the sort of examination that the Institute regards as desirable."

(Signed)

CHARLES B. DAVENPORT  
IRVING FISHER.

SUGGESTION FOR FINAL CUSTODY OF THE REGISTER WHEN COMPLETED

## CARNEGIE INSTITUTION OF WASHINGTON

DEPARTMENT OF EXPERIMENTAL EVOLUTION

STATION FOR EXPERIMENTAL EVOLUTION

COLD SPRING HARBOR, LONG ISLAND, N. Y.

"Recognizing the need of a permanent repository for records of human traits, and convinced that such records may be of use in the future to students of heredity and to subsequent generations of those who have recorded their data, the Eugenics Record Office, located at Cold Springs Harbor, Long Island, N. Y., has undertaken to provide a suitable repository for such records. It has a fire-proof vault in which these records are kept in confidential fashion, and indexed so that their existence may be known, and so that they can be found when wanted; but names are not published in connection with the data so deposited. While there are those who specifically

request that the data they supply shall be utilized to the uttermost, there may be those who wish to keep their records for the exclusive use of members of the family. In such case, if the records be marked '*extra confidential*,' they will be preserved with especial privacy, in "sealed envelope," under lock and key, to be available only on order of a member of the family for a period of fifty years."

(Signed) CHARLES B. DAVENPORT,

Resident Director,

Eugenics Record Office, Cold Spring Harbor, N. Y.





# Directions for the Registrar

## Hints on How to Fill in the Blanks and Make Use of the Facts

In order that the Records shall be of real value, the person making them should do so carefully and exactly. By this means only is it possible to know promptly and recall with certainty facts of gravest consequence to health, life, happiness, career, or reputation. All information bearing on family or personal history should be collected; the more significant items carefully summarized and legibly inscribed on the blank pages and under the classifications provided. It is desirable that parents gather all accessible material, from all reputable sources; write them first in a large notebook; then arrange them in sequence, under proper headings; then, after judicious revision, verification and *condensation*, copy them legibly (or have an expert penman copy them) in the Register. Wherever the leaves provided are insufficient to contain the inscriptions, a page marked "Special Happenings" can be used for the excess, the corresponding page and number being specified.

If parents should be of the opinion that it is undesirable to inscribe in the records any facts of an unpleasant, unlovely, or extremely private nature, these can be placed on another sheet and preserved separately.<sup>1</sup>

Often it will be found on consulting a wise physician, or other person skilled in the science of personal welfare, that facts of private nature are of *paramount importance* in forming a correct conception or interpretation of other facts, or in forming right judgments. If the essential ones shall not be forthcoming on the proper occasion, the best interests of the individual or descendants may be jeopardized. Always they can, and should be, placed on record, couched in technical phrases, or so worded as to be unobjectionable.

The *Index* is designed to serve as a record of all births, marriages, and deaths, when they occur; also references to all pages wherever filled in (blanks, histories, charts, findings of specialists, etc.). Thus all the data on record will be accessible under the name of that individual.

**GENEALOGY:** The Table of Genealogy, or the "Family Tree," should be made as exact and complete as possible. This may involve careful research. Deliberation is advisable, along with persistence and critical acumen. It would seem best at first here also to collect data in a blank-book and, after thorough revision and verification, arrange them for inscription. The table provides only for direct ancestors (ascendants). It is of interest to obtain data also on collaterals (uncles, aunts, cousins, etc.) and alliants (members by marriage). These extras can be inscribed on a page marked "Special Happenings"; or on separate sheets or cards, and placed in the pocket at the end.

<sup>1</sup> At the end of the book a pocket, or envelope, is provided to contain any additional detached paper.

**BABY RECORDS:** The blanks for Baby Records occupy several pages. The Questionnaires have been condensed as much as possible. They are fairly comprehensive—some parents will think them too much so. The author has given conscientious attention to the baby questionnaires, and had good counsel from many experts in varied lines of science, *e.g.*, biologists, eugenis, psychologists, etc., as well as experienced physicians.

The forms may not yet be perfect; many queries suggested have been necessarily omitted, notably those dealing with earlier psychologic phenomena. To have put them all in would have caused the criticism of overelaboration. All earlier significant occurrences should be mentioned, *e.g.*, whether any accidental damagements occurred to the mother or child at the time of birth. Describe the circumstances of birth, whether normal or instrumental, easy or difficult; how long a time occupied from start to finish; state of the mother's health for previous year; mentioning exhaustion states, worries, strains; any defect of animation of infant, asphyxia; if so, how long; any convulsions, "spasms" or "spells" soon after birth; whether accidentally "overlaid," etc. A supplementary blank is in preparation designed to cover many important psychologic and physiologic points. This can be filled out by those who wish to make a more thorough study of a child. Some hypersensitive parents may shrink, as has been said, from placing on record, even in a book safe from observation, certain painful or unlovely peculiarities. These can, and should be, conscientiously recorded on a special sheet and preserved in the pocket at the end. They can be preserved in some secret place, or given in custody to a trustworthy person, or entrusted to the Eugenics Record Office, Cold Spring Harbor, N. Y.

**PERSONAL HISTORY:** It is of the greatest importance that a full and exact history be made of any individual (over one year of age—previous to this the Baby Records will serve).

It is recommended to begin a history at the earliest moment, in a blank-book, collecting evidence from all available sources, omitting no well-authenticated fact. After ample time has been taken, and all avenues of information gleaned, a compendium, or synopsis, should be made for the book. In this research it is well to elicit the co-operation of the family physician, the clergyman, the legal adviser, one or all, and an ancient member of the family whose judgment and memory can be relied upon. This groping for data applies only to the earlier records. When once these are thoroughly started, getting the later ones becomes a simpler matter.

Especially is it desirable to secure all facts bearing on earliest physical and mental peculiarities, whether favorable or unfavorable. If possible, the circumstances



of birth should be ascertained, whether normal or abnormal, precisely what the abnormalities were; whether as a baby one was breast-fed, wholly, or in part; if so, how long; any illness during babyhood, its progress, phenomena, complications, etc., and whatever else can be learned of any attack of illness, or injury; periods of depressed health, their nature, phenomena, complications; the age and condition of health of *each* parent at the time of the child's birth (a physician should be asked to aid in the preparation of these statements). It is especially necessary to know many facts which false modesty in older times subordinated, falsified or suppressed. Sexual development is often accompanied by phenomena of deepest significance to attending physicians, whether acute disturbance then occurred or not. (Mem.: See outline of normal evolution and devolution, defects and abnormalities, in Appendix.)

While this sexual history is of deep import among males, it is particularly necessary to know of females the circumstances of adolescence, of puberty; the earliest appearance of menstruation; whether regular or otherwise; if deranged, how, to what extent, and, if possible, why, etc.

Peculiarities of development, physical and mental, exert a large bearing on later conditions for good or for evil.

Memoranda should appear on *conformation, age values, degree and quality of advancement or retardation*, mental make-up, coloring, disposition, tastes, education, methods of life, environment, opportunities or deprivations, special aptitudes or limitations. Not seldom a conscientious preservation of facts such as these may save an individual from manifold blunders, chronic invalidism, loss of mental integrity—may even save life itself. (Memoranda should always be signed and dated by the observer, preferably by a physician.)

In the final revision much help will be afforded by the counsel of persons educated in natural science, biology, physiology and economics.

**HISTORY OF AN ATTACK OF ILLNESS, OR INJURY:** In keeping an account of an attack of illness or an injury, the best results are obtainable by entrusting the entry of memoranda to the physician in charge (to be dated and signed by him). If no physician has been consulted, it is then the duty of some responsible member of the family. The best notes result from a condensation from longer archives made circumstantially at the time of occurrence.

Exact accounts of serious illness are of utmost value to physicians consulted on later occasions, supplying precise knowledge, instead of the (only too common) vague recollections and distorted opinions of the person concerned, or of parents, or, worse than all, of grandparents, collateral relatives, or irresponsible hirelings. Note particularly any special complications or occurrences which might possibly exert effects on future states.

**BLANKS FOR OBSERVATIONS AND FINDINGS OF SPECIALISTS:** These records should be made, whenever pos-

sible, by the specialist himself. Whenever previous findings are obtainable they should be included. They will show phenomena of change, of progress or retrogression; will act as bases for comparison, as aids in determining conduct, recommendations, treatment; and point the way to final judgments.

**BLANKS FOR LABORATORY FINDINGS:** Laboratory reports (always dated) are readily copied from the originals, only the salient points need be inscribed. They *should always be accompanied by the full name of the person examined, date of examination, analyses, etc.*, never omitting a clinical summary of the conditions then prevailing. It is best that this statement be made by the physician himself, or at least, directly from his notes, and signed by him. In the absence of medical advice, statements of the patient or other reliable persons are often of great significance.

**WEIGHT AND HEIGHT CHARTS:** A very graphic and almost necessary part of a baby record is a chart showing progress in weight and height. This can be kept by the parent, or skilled nurse, written in pencil till completed, then carefully inked. Standard tables of weight and height, from L. Emmett Holt, are included.

Throughout the whole period of growth in weight and height it is interesting and valuable to keep a record of progress. It was proposed to add a chart for children beyond the first year on to full maturity, but this was omitted to economize space. A table will do as well, and this can be put upon a page of "Special Happenings."

**ANATOMICAL CHARTS:** These outlines of parts of the body are for the physician, to indicate where a lesion (sick or damaged spot) of any kind is found; also the name, date of observation, age and nature of the lesion. When these charts are used there should be accurate cross-references made to page and number of other memoranda, and all noted in the *Index*.

It is well also for the physician to make a later record, or records, to show changes.

**SPECIAL HAPPENINGS:** In the history of every family many things happen which should be faithfully and accurately set down. The momentousness of these may be confined largely, if not wholly, to individual members. To them one or more entries may prove of vital importance to welfare of person, property or reputation. On the other hand, it is a fact that among seemingly the most prosaic lives, occurrences often arise which, if carefully observed and faithfully transcribed, are capable of affording significant facts and indications of deep utility to those who can rightly estimate and interpret them. "The short and simple annals of the poor," or seemingly commonplace happenings, have served as a theme for the greatest poets and thinkers; and one may arise in any family.

To attempt to determine what is and what is not worth chronicling might impair spontaneity, hence in registering "Special Happenings" it is well to proceed as in narrating life and death data—jot down one's obser-



vations at full length, and *condense for final inscription*. So varied, indeed, diverse, are these memorabilia that it is difficult to offer suggestions as to what sort or kind of events, doings, impressions, or sensations shall be chosen for preservation. This subject is of vital significance. The integrity of the registrations depends on the accuracy, conscientiousness and intelligence with which answers to these questions are made. Judgment is here needed, to present only facts really significant. Good results can only be achieved (by any one) by writing down in a blank-book all observations which are made, and intelligently condensing them (with the aid, if possible, of some scientifically educated person) and then transcribing the outline in the Register.

In order to form some idea of what should at least be covered, the following roughly suggestive classification is offered:—

1. Whatever happens of sufficient interest to excite attention at the time, agreeable and disagreeable, any fortuitous, spontaneous occurrence—*e.g.*, meeting with people, current events, as one notes or comes in contact with them, of a public or private nature; friendships, antagonisms, gifts, acquisitions, losses, accidents, and all notable events.

2. Lines of education pursued, aptitudes exhibited, capacities developed, choices made, purposes formed or carried out, well or ill, volitions, vocations, handicrafts, scholastic records, special tastes, studies for which strong preference is shown.

3. Deeds, performances, pursuits, activities, ventures, adventures, inventions, works of literature or art accomplished, all that is within a liberal interpretation of the word *industries*, or vocations, avocations or careers.

4. Achievements, successes, honors, distinctions attained, definite accomplishment in special occupations, *e.g.*, agriculture, entertainment, the fine arts, the church, the law, medicine, engineering, political life, literature, teaching, scientific investigation, civil, domestic or personal service, trade, transportation, manufacturing, building, trades, etc., etc.

5. Development of character, purposes, aspirations realized; determinations, beliefs, held or rejected; renunciations, self-examinations, satisfactions, disappointments, recreations, sports, habits, good or bad, etc.

6. It is desirable that memoranda be made of the financial and social evolution of a family; what advantages or disadvantages resulted from changes in condition from worse to better, or from better to worse; to give impressions of the effects of early upbringing, schooling, associations, occupations, on the present conditions of life; what amount of control over early conditions one could, or did, exercise, or was exercised by others, parents or teachers, during school age, or by employers later; the effects of religion; circumstances in the home; the habits or peculiarities of parents, or of influential neighbors; note the steps of progress in chosen occupations, the motives or circumstances which induced final determinations, choice of career; note attitudes of mind or taste toward selection of a wife or husband, toward society, beliefs, politics; or guiding considerations toward change, voluntary or involuntary, in original circumstances; or decisions, as of marriage or divorce.

Parents owe it to their children to afford them some sidelights from their own experience, whereby the children can learn family tendencies, trends, also from the facts of their own personal, domestic and social evolution. It is eminently desirable for children to get some idea of what determined choice in their parents' decisions.





## RECORD OF HISTORY OF HEALTH OF

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This record should contain a complete chronologic outline of all obtainable facts bearing on health, growth and development of body or mind from birth to the date of inscription. Details or elaborations (often of extreme value) should be inscribed on a page marked "Special Happenings," or on loose leaves, and preserved in the pocket.

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# Baby Record

If the space provided for any answer be not sufficient, make a note: "See fuller answer on sheet in pocket at the end of the book," number this and take an extra sheet numbering to correspond, write the answer completely and file as directed. Or a page marked "Special Happenings" can be used. Underscore for "Yes," cross out for "No."

NAME .....

DATE OF BIRTH ..... Day of Week ..... Hour ..... A.M. or ..... P.M.

CIRCUMSTANCES OF BIRTH: It is most important that any unusual circumstances occurring at birth be inscribed by the physician; *e.g.*, whether at term or premature .....; labor, normal or instrumental .....; easy or difficult .....; how long from start to finish ..... Was there any defect of animation? ..... asphyxia? ..... If so, how long? ..... Convulsions ....., spasms .....; spells ....., soon after birth? Was the baby "over-lain"? ..... Any other salient points? .....  
..... Give dates with facts .....

.....  
.....  
.....  
Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? .....  
Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

.....  
.....  
.....  
Give color of eyes at birth .....; at six months .....; at one year .....; at two and a half years .....; at five years .....; at twenty years ..... Note any unusualness, as dissimilarity in color, size, or shape of pupils; crossed or divergent, etc.; redness, or drooping of lids. Note date of appearance of secretion in corners; of first pain, headache; whether due to excess of glare, or attempts to see objects too closely. ....

.....  
.....  
RED LETTER DAYS: Brief descriptions of phenomena of mental and motor development; degree and kind of activities; capacity for self-direction. Relate what the infant can do, at certain ages; how it does it; how it guides itself, hands, feet, head, body, etc. Watch for, and note, accommodation of eye to fix



vision upon near and far objects, about the seventh or eighth week .....

.....  
Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
.....; joy .....; disgust .....; dejection .....; elation .....; love  
.....; anger .....; excitability .....; pugnacity .....; self-abasement ....  
.....; sympathy .....; consciousness of self—when "I" was first used understandingly .....

.....  
Note especially outbursts of rage, and that which caused them. Comment on obstinacy, affability, socia-  
bility, desire to please, degree of reserve, irritability, self-control, moral and esthetic appreciation (pictures,  
music, color, etc.) .....

.....  
Note date of first tears .....; First real smile (not due to colic) .....; When baby first  
recognized mother by touch .....; by sight .....; by hearing ..... When  
first discovered hands and feet, and they began to be focus of sight and interest .....; When  
first put out hands .....; took hold of objects .....; When first able to hold up head  
.....; to sit up .....; First creepings .....; First steps alone .....;  
First walkings alone .....; First vocal sounds uttered .....; First words spoken .....  
.....; First words put together .....; Degree of intelligence and precision in speech, etc.  
.....; First manifestation, and cause, of fear instinct .....

.....  
SLEEP: Describe length, and depth of; condition during; attitude; restlessness; crying out; sucking in  
sleep; first evidence of dreams .....

.....  
There should be a brief description given, on separate sheet, of the progress of the baby at successive  
ages, and in comparison with what is usually observed in others: capacity for self-direction, for obedience;  
whether independent or inviting help, or for co-operation, etc. This should be entered on a page marked,  
"Personal History."

NOTES OF PROGRESS: Sayings, tastes, emotions, morals, likes and dislikes, impulses, imitations, habits,  
etc. Use page marked "Special Happenings." .....

Note (with date when first observed) the kinds of things which excite interest; lights, colors, sounds;



*e.g.*, music, what kinds; efforts to sing, etc.; how well directed or sustained .....

.....

.....

HAIR: At birth: growth .....; quality .....; color ..... at one year .....

.....; at five years .....; and at five-year periods thereafter .....

.....

PHENOMENA OF PUBERTY: Date of first hair on pubes .....; axilla .....

In a boy, hair on face .....; change of voice..... In a girl, first menstruation .....

TEETH: Date of first tooth .....; Order of Irruption of teeth .....

..... condition of teeth .....

.....

After first year, subsequent progress and changes should be inscribed on Special Blank page (see Chart of Teeth); note order of appearance of temporary, and later of permanent, teeth .....

MEASUREMENTS should be made of head, at intervals of six months: from ear to ear (1) across forehead .....; (2) across crown .....; (3) around back of head .....; also circumference.

PRINTS should be made of skin of thumbs, finger-tips, and palms, at two dates; *e.g.*, one month, and one year (file with photographs).

EYES should be examined by competent ophthalmologist at five years. (See "Personal History" after one year of age.)

Specimens of handwriting and drawing at five years and each year thereafter. (See Blank page for "Handwriting.")

HEALTH RECORD: Vaccination: (The physician should make this entry and note subsequent vaccinations; whether satisfactory, etc.)

ILLNESSES: It is imperative that an outline be kept of all illnesses, great and small; with dates, diagnosis, complications, duration, and any salient features. In males, note condition of prepuce; whether circumcised. (For full record of any one illness see "Personal History.")

CHRISTENING: Date ..... Clergyman .....

Place and circumstances .....

Godfathers (1) ..... (2) .....

Godmothers (1) ..... (2) .....

Witnesses .....

FRIENDS: Names; when and where met; photographs of special friends (only real friends, not chance acquaintances) .....

PETS: Note what kinds of pets are especially attractive at different ages, and how they are esteemed and how treated .....

TOYS: Note what kinds of toys attract; whether mechanical, artistic, dolls, and the like .....

SPECIAL TASTES, for foods, objects, plants, flowers, birds, etc. ....

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A table should be made of the number of previous children of each parent, in order of birth; present age, or, if dead, age, date and cause of death, duration of illness; if living, social position (married, single, occupation, etc.).

The collateral heredity of present generation would be covered by history of father, of mother, of brothers, and sisters; also, if possible, of grandparents of each side, uncles, aunts cousins; state of general nutrition (delicate, average, or vigorous).



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..... Give dates with facts .....

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Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? ..... Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

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Give color of eyes at birth .....; at six months .....; at one year .....; at two and a half years .....; at five years .....; at twenty years ..... Note any unusualness, as dissimilarity in color, size, or shape of pupils; crossed or divergent, etc.; redness, or drooping of lids. Note date of appearance of secretion in corners; of first pain, headache; whether due to excess of glare, or attempts to see objects too closely. ....

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Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
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Note especially outbursts of rage, and that which caused them. Comment on obstinacy, affability, sociability, desire to please, degree of reserve, irritability, self-control, moral and esthetic appreciation (pictures, music, color, etc.) .....

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Note date of first tears .....; First real smile (not due to colic) .....; When baby first  
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etc. Use page marked "Special Happenings." .....  
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HAIR: At birth: growth .....; quality .....; color ..... at one year .....

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PHENOMENA OF PUBERTY: Date of first hair on pubes .....; axilla .....

In a boy, hair on face .....; change of voice..... In a girl, first menstruation .....

TEETH: Date of first tooth .....; Order of Irruption of teeth .....

..... condition of teeth .....

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After first year, subsequent progress and changes should be inscribed on Special Blank page (see Chart of Teeth); note order of appearance of temporary, and later of permanent, teeth .....

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Place and circumstances .....

Godfathers (1) ..... (2) .....

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Witnesses .....



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Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

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DATE OF BIRTH ..... Day of Week ..... Hour .....A.M. or .....P.M.

CIRCUMSTANCES OF BIRTH: It is most important that any unusual circumstances occurring at birth be inscribed by the physician; *e.g.*, whether at term or premature .....; labor, normal or instrumental .....; easy or difficult .....; how long from start to finish ..... Was there any defect of animation? ..... asphyxia? ..... If so, how long? ..... Convulsions ....., spasms .....; spells ....., soon after birth? Was the baby "over-lain"? ..... Any other salient points? .....  
..... Give dates with facts .....

.....  
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Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? ..... Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

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Give color of eyes at birth .....; at six months .....; at one year .....; at two and a half years .....; at five years .....; at twenty years ..... Note any unusualness, as dissimilarity in color, size, or shape of pupils; crossed or divergent, etc.; redness, or drooping of lids. Note date of appearance of secretion in corners; of first pain, headache; whether due to excess of glare, or attempts to see objects too closely. ....

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RED LETTER DAYS: Brief descriptions of phenomena of mental and motor development; degree and kind of activities; capacity for self-direction. Relate what the infant can do, at certain ages; how it does it; how it guides itself, hands, feet, head, body, etc. Watch for, and note, accommodation of eye to fix



vision upon near and far objects, about the seventh or eighth week .....

.....  
Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
.....; joy .....; disgust .....; dejection .....; elation .....; love  
.....; anger .....; excitability .....; pugnacity .....; self-abasement ....  
.....; sympathy .....; consciousness of self—when “I” was first used understandingly .....

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Note especially outbursts of rage, and that which caused them. Comment on obstinacy, affability, socia-  
bility, desire to please, degree of reserve, irritability, self-control, moral and esthetic appreciation (pictures,  
music, color, etc.) .....

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Note date of first tears .....; First real smile (not due to colic) .....; When baby first  
recognized mother by touch .....; by sight .....; by hearing ..... When  
first discovered hands and feet, and they began to be focus of sight and interest .....; When  
first put out hands .....; took hold of objects .....; When first able to hold up head  
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First walkings alone .....; First vocal sounds uttered .....; First words spoken ....  
.....; First words put together .....; Degree of intelligence and precision in speech, etc.  
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SLEEP: Describe length, and depth of; condition during; attitude; restlessness; crying out; sucking in  
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There should be a brief description given, on separate sheet, of the progress of the baby at successive  
ages, and in comparison with what is usually observed in others: capacity for self-direction, for obedience;  
whether independent or inviting help, or for co-operation, etc. This should be entered on a page marked,  
“Personal History.”

NOTES OF PROGRESS: Sayings, tastes, emotions, morals, likes and dislikes, impulses, imitations, habits,  
etc. Use page marked “Special Happenings.” .....

Note (with date when first observed) the kinds of things which excite interest; lights, colors, sounds;

*e.g.*, music, what kinds; efforts to sing, etc.; how well directed or sustained .....

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HAIR: At birth: growth .....; quality .....; color ..... at one year .....  
.....; at five years .....; and at five-year periods thereafter .....

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PHENOMENA OF PUBERTY: Date of first hair on pubes .....; axilla .....  
In a boy, hair on face .....; change of voice..... In a girl, first menstruation .....

TEETH: Date of first tooth .....; Order of Irruption of teeth .....  
..... condition of teeth .....

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After first year, subsequent progress and changes should be inscribed on Special Blank page (see Chart of Teeth); note order of appearance of temporary, and later of permanent, teeth .....

MEASUREMENTS should be made of head, at intervals of six months: from ear to ear (1) across forehead .....; (2) across crown .....; (3) around back of head .....; also circumference.

PRINTS should be made of skin of thumbs, finger-tips, and palms, at two dates; *e.g.*, one month, and one year (file with photographs).

EYES should be examined by competent ophthalmologist at five years. (See "Personal History" after one year of age.)

Specimens of handwriting and drawing at five years and each year thereafter. (See Blank page for "Handwriting.")

HEALTH RECORD: Vaccination: (The physician should make this entry and note subsequent vaccinations; whether satisfactory, etc.)

ILLNESSES: It is imperative that an outline be kept of all illnesses, great and small; with dates, diagnosis, complications, duration, and any salient features. In males, note condition of prepuce; whether circumcised. (For full record of any one illness see "Personal History.")

CHRISTENING: Date ..... Clergyman .....  
Place and circumstances .....

Godfathers (1) ..... (2) .....

Godmothers (1) ..... (2) .....

Witnesses .....



FRIENDS: Names; when and where met; photographs of special friends (only real friends, not chance acquaintances) .....

PETS: Note what kinds of pets are especially attractive at different ages, and how they are esteemed and how treated .....

TOYS: Note what kinds of toys attract; whether mechanical, artistic, dolls, and the like .....

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PHOTOGRAPHS: To be taken in profile and full face, at regular intervals during the first year; then once in two years; after five years, once in two or three years until ten years; after that at five-year intervals. (See Special Page for Photographs.)

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From this point (at twelve months) subsequent steps of progress should be carefully noted (on separate sheet); such as degree of sociability as a child; age at which education began; effects of environment and training; forms of discipline applied, and how the child responded. Financial and social condition of parents and family; advantages or disadvantages resulting therefrom, *i.e.*, handicaps or opportunities in progress; kind of bringing-up; the social level in which the child was raised; the later forms of schooling; kinds of teaching; choice of occupation; degree of controllability by parents or teachers; progress before and during school-life; in occupation or profession; religion; habits; character of home life; of parents; of neighbors. Choice and progress of occupation of child; motives for determination; circumstances of final choice. Attitude toward sex, matrimony, politics, society, etc. Motives which led to choice of a wife or husband; qualities of the chosen mate; children, desire for, or repulsion to. Mark left upon the world by number and kind of offspring. Forms and kinds of occupation, altruistic, or material; possessiveness, or generosity, etc.

As a part of the BABY RECORD it is important to keep special notes of facts bearing upon the condition of health, physical and mental, of both parents (at time of conception of infant); their ages; whether parents have ever been married before; whether they have or have had other children; how many, age and sex of each; also their salient characteristics (specific family traits). Give occupation of father, and, if not alive, date and cause of death.

An outline should be given of condition of health, or unhealth, of each parent; *e.g.*, tuberculosis, gout, syphilis, anemia, general state of nutrition, mental or physical strains, exhaustion states, etc. This last is of special significance to be recorded of the mother, as bearing on the state of vitality of the infant.

A table should be made of the number of previous children of each parent, in order of birth; present age, or, if dead, age, date and cause of death, duration of illness; if living, social position (married, single, occupation, etc.).

The collateral heredity of present generation would be covered by history of father, of mother, of brothers, and sisters; also, if possible, of grandparents of each side, uncles, aunts cousins; state of general nutrition (delicate, average, or vigorous).



# Baby Record

If the space provided for any answer be not sufficient, make a note: "See fuller answer on sheet in pocket at the end of the book," number this and take an extra sheet numbering to correspond, write the answer completely and file as directed. Or a page marked "Special Happenings" can be used. Underscore for "Yes," cross out for "No."

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DATE OF BIRTH ..... Day of Week ..... Hour ..... A.M. or ..... P.M.

CIRCUMSTANCES OF BIRTH: It is most important that any unusual circumstances occurring at birth be inscribed by the physician; *e.g.*, whether at term or premature .....; labor, normal or instrumental .....; easy or difficult .....; how long from start to finish ..... Was there any defect of animation? ..... asphyxia? ..... If so, how long? ..... Convulsions ....., spasms .....; spells ....., soon after birth? Was the baby "over-lain"? ..... Any other salient points? .....  
..... Give dates with facts .....

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Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? ..... Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

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Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
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SLEEP: Describe length, and depth of; condition during; attitude; restlessness; crying out; sucking in sleep; first evidence of dreams .....

There should be a brief description given, on separate sheet, of the progress of the baby at successive ages, and in comparison with what is usually observed in others: capacity for self-direction, for obedience; whether independent or inviting help, or for co-operation, etc. This should be entered on a page marked, "Personal History."

NOTES OF PROGRESS: Sayings, tastes, emotions, morals, likes and dislikes, impulses, imitations, habits, etc. Use page marked "Special Happenings." .....

Note (with date when first observed) the kinds of things which excite interest; lights, colors, sounds;

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PHENOMENA OF PUBERTY: Date of first hair on pubes .....; axilla .....

In a boy, hair on face .....; change of voice..... In a girl, first menstruation .....

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After first year, subsequent progress and changes should be inscribed on Special Blank page (see Chart of Teeth); note order of appearance of temporary, and later of permanent, teeth .....

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CHRISTENING: Date ..... Clergyman .....

Place and circumstances .....

Godfathers (1) ..... (2) .....

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Witnesses .....



FRIENDS: Names; when and where met; photographs of special friends (only real friends, not chance acquaintances) .....

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As a part of the BABY RECORD it is important to keep special notes of facts bearing upon the condition of health, physical and mental, of both parents (at time of conception of infant); their ages; whether parents have ever been married before; whether they have or have had other children; how many, age and sex of each; also their salient characteristics (specific family traits). Give occupation of father, and, if not alive, date and cause of death.

An outline should be given of condition of health, or unhealth, of each parent; *e.g.*, tuberculosis, gout, syphilis, anemia, general state of nutrition, mental or physical strains, exhaustion states, etc. This last is of special significance to be recorded of the mother, as bearing on the state of vitality of the infant.

A table should be made of the number of previous children of each parent, in order of birth; present age, or, if dead, age, date and cause of death, duration of illness; if living, social position (married, single, occupation, etc.).

The collateral heredity of present generation would be covered by history of father, of mother, of brothers, and sisters; also, if possible, of grandparents of each side, uncles, aunts cousins; state of general nutrition (delicate, average, or vigorous).



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DATE OF BIRTH ..... Day of Week ..... Hour ..... A.M. or ..... P.M.

CIRCUMSTANCES OF BIRTH: It is most important that any unusual circumstances occurring at birth be inscribed by the physician; *e.g.*, whether at term or premature .....; labor, normal or instrumental .....; easy or difficult .....; how long from start to finish ..... Was there any defect of animation? ..... asphyxia? ..... If so, how long? ..... Convulsions ....., spasms .....; spells ....., soon after birth? Was the baby "over-lain"? ..... Any other salient points? .....  
..... Give dates with facts .....

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Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? .....  
Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

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Give color of eyes at birth .....; at six months .....; at one year .....; at two and a half years .....; at five years .....; at twenty years ..... Note any unusualness, as dissimilarity in color, size, or shape of pupils; crossed or divergent, etc.; redness, or drooping of lids. Note date of appearance of secretion in corners; of first pain, headache; whether due to excess of glare, or attempts to see objects too closely. ....

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RED LETTER DAYS: Brief descriptions of phenomena of mental and motor development; degree and kind of activities; capacity for self-direction. Relate what the infant can do, at certain ages; how it does it; how it guides itself, hands, feet, head, body, etc. Watch for, and note, accommodation of eye to fix

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Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
.....; joy .....; disgust .....; dejection .....; elation .....; love  
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Place and circumstances .....

Godfathers (1) ..... (2) .....

Godmothers (1) ..... (2) .....

Witnesses .....



FRIENDS: Names; when and where met; photographs of special friends (only real friends, not chance acquaintances) .....

PETS: Note what kinds of pets are especially attractive at different ages, and how they are esteemed and how treated .....

TOYS: Note what kinds of toys attract; whether mechanical, artistic, dolls, and the like .....

SPECIAL TASTES, for foods, objects, plants, flowers, birds, etc. ....

VARIOUS INTERESTING AND SIGNIFICANT EVENTS: Agreeable and disagreeable (*e.g.*, of later accidents, shocks, falls, bruises, injuries of the head, joints, nose, etc.). (Use page for Illness or Injury).

PHOTOGRAPHS: To be taken in profile and full face, at regular intervals during the first year; then once in two years; after five years, once in two or three years until ten years; after that at five-year intervals. (See Special Page for Photographs.)

For those who are willing to make a more careful study of the psychologic phenomena, separate blanks are provided. These can be preserved in the pocket in the inside of the cover.

## SUPPLEMENTARY MEMORANDA

From this point (at twelve months) subsequent steps of progress should be carefully noted (on separate sheet); such as degree of sociability as a child; age at which education began; effects of environment and training; forms of discipline applied, and how the child responded. Financial and social condition of parents and family; advantages or disadvantages resulting therefrom, *i.e.*, handicaps or opportunities in progress; kind of bringing-up; the social level in which the child was raised; the later forms of schooling; kinds of teaching; choice of occupation; degree of controllability by parents or teachers; progress before and during school-life; in occupation or profession; religion; habits; character of home life; of parents; of neighbors. Choice and progress of occupation of child; motives for determination; circumstances of final choice. Attitude toward sex, matrimony, politics, society, etc. Motives which led to choice of a wife or husband; qualities of the chosen mate; children, desire for, or repulsion to. Mark left upon the world by number and kind of offspring. Forms and kinds of occupation, altruistic, or material; possessiveness, or generosity, etc.

As a part of the BABY RECORD it is important to keep special notes of facts bearing upon the condition of health, physical and mental, of both parents (at time of conception of infant); their ages; whether parents have ever been married before; whether they have or have had other children; how many, age and sex of each; also their salient characteristics (specific family traits). Give occupation of father, and, if not alive, date and cause of death.

An outline should be given of condition of health, or unhealth, of each parent; *e.g.*, tuberculosis, gout, syphilis, anemia, general state of nutrition, mental or physical strains, exhaustion states, etc. This last is of special significance to be recorded of the mother, as bearing on the state of vitality of the infant.

A table should be made of the number of previous children of each parent, in order of birth; present age, or, if dead, age, date and cause of death, duration of illness; if living, social position (married, single, occupation, etc.).

The collateral heredity of present generation would be covered by history of father, of mother, of brothers, and sisters; also, if possible, of grandparents of each side, uncles, aunts cousins; state of general nutrition (delicate, average, or vigorous).



## Baby Record

If the space provided for any answer be not sufficient, make a note: "See fuller answer on sheet in pocket at the end of the book," number this and take an extra sheet numbering to correspond, write the answer completely and file as directed. Or a page marked "Special Happenings" can be used. Underscore for "Yes," cross out for "No."

NAME .....

DATE OF BIRTH ..... Day of Week ..... Hour ..... A.M. or ..... P.M.

CIRCUMSTANCES OF BIRTH: It is most important that any unusual circumstances occurring at birth be inscribed by the physician; *e.g.*, whether at term or premature .....; labor, normal or instrumental .....; easy or difficult .....; how long from start to finish ..... Was there any defect of animation? ..... asphyxia? ..... If so, how long? ..... Convulsions ....., spasms .....; spells ....., soon after birth? Was the baby "over-lain"? ..... Any other salient points? .....

..... Give dates with facts .....

Give here a brief statement (and a fuller account in "Personal History") of the mother and her condition at time of this birth and for a year previous.

FAMILY HISTORY: (To be found elsewhere in the Register.)

PERSONAL HISTORY. Feeding: Breast-fed? (whether by mother or wet nurse) ..... How long nursed only at breast? ..... If part bottle and part breast, how long was any breast milk used? ..... Note any peculiarities of digestion, appetite, capacity, disturbances, etc. What form of substitute feeding?

Give color of eyes at birth .....; at six months .....; at one year .....; at two and a half years .....; at five years .....; at twenty years ..... Note any unusualness, as dissimilarity in color, size, or shape of pupils; crossed or divergent, etc.; redness, or drooping of lids. Note date of appearance of secretion in corners; of first pain, headache; whether due to excess of glare, or attempts to see objects too closely. ....

RED LETTER DAYS: Brief descriptions of phenomena of mental and motor development; degree and kind of activities; capacity for self-direction. Relate what the infant can do, at certain ages; how it does it; how it guides itself, hands, feet, head, body, etc. Watch for, and note, accommodation of eye to fix

vision upon near and far objects, about the seventh or eighth week .....

.....  
Note (date and age) first manifestations and development of emotions: surprise .....; curiosity  
.....; joy .....; disgust .....; dejection .....; elation .....; love  
.....; anger .....; excitability .....; pugnacity .....; self-abasement ....  
.....; sympathy .....; consciousness of self—when "I" was first used understandingly .....

.....  
Note especially outbursts of rage, and that which caused them. Comment on obstinacy, affability, socia-  
bility, desire to please, degree of reserve, irritability, self-control, moral and esthetic appreciation (pictures,  
music, color, etc.) .....

.....  
Note date of first tears .....; First real smile (not due to colic) .....; When baby first  
recognized mother by touch .....; by sight .....; by hearing ..... When  
first discovered hands and feet, and they began to be focus of sight and interest .....; When  
first put out hands .....; took hold of objects .....; When first able to hold up head  
.....; to sit up .....; First creepings .....; First steps alone .....;  
First walkings alone .....; First vocal sounds uttered .....; First words spoken ....  
.....; First words put together .....; Degree of intelligence and precision in speech, etc.  
.....; First manifestation, and cause, of fear instinct .....

.....  
SLEEP: Describe length, and depth of; condition during; attitude; restlessness; crying out; sucking in  
sleep; first evidence of dreams .....

.....  
There should be a brief description given, on separate sheet, of the progress of the baby at successive  
ages, and in comparison with what is usually observed in others: capacity for self-direction, for obedience;  
whether independent or inviting help, or for co-operation, etc. This should be entered on a page marked,  
"Personal History."

NOTES OF PROGRESS: Sayings, tastes, emotions, morals, likes and dislikes, impulses, imitations, habits,  
etc. Use page marked "Special Happenings." .....

Note (with date when first observed) the kinds of things which excite interest; lights, colors, sounds;



*e.g.*, music, what kinds; efforts to sing, etc.; how well directed or sustained .....

.....

.....

HAIR: At birth: growth .....; quality .....; color ..... at one year .....

.....; at five years .....; and at five-year periods thereafter .....

.....

PHENOMENA OF PUBERTY: Date of first hair on pubes .....; axilla .....

In a boy, hair on face .....; change of voice..... In a girl, first menstruation .....

TEETH: Date of first tooth .....; Order of Irruption of teeth .....

..... condition of teeth .....

.....

After first year, subsequent progress and changes should be inscribed on Special Blank page (see Chart of Teeth); note order of appearance of temporary, and later of permanent, teeth .....

MEASUREMENTS should be made of head, at intervals of six months: from ear to ear (1) across forehead .....; (2) across crown .....; (3) around back of head .....; also circumference.

PRINTS should be made of skin of thumbs, finger-tips, and palms, at two dates; *e.g.*, one month, and one year (file with photographs).

EYES should be examined by competent ophthalmologist at five years. (See "Personal History" after one year of age.)

Specimens of handwriting and drawing at five years and each year thereafter. (See Blank page for "Handwriting.")

HEALTH RECORD: Vaccination: (The physician should make this entry and note subsequent vaccinations; whether satisfactory, etc.)

ILLNESSES: It is imperative that an outline be kept of all illnesses, great and small; with dates, diagnosis, complications, duration, and any salient features. In males, note condition of prepuce; whether circumcised. (For full record of any one illness see "Personal History.")

CHRISTENING: Date ..... Clergyman .....

Place and circumstances .....

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PHOTOGRAPHS: To be taken in profile and full face, at regular intervals during the first year; then once in two years; after five years, once in two or three years until ten years; after that at five-year intervals. (See Special Page for Photographs.)

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As a part of the BABY RECORD it is important to keep special notes of facts bearing upon the condition of health, physical and mental, of both parents (at time of conception of infant); their ages; whether parents have ever been married before; whether they have or have had other children; how many, age and sex of each; also their salient characteristics (specific family traits). Give occupation of father, and, if not alive, date and cause of death.

An outline should be given of condition of health, or unhealth, of each parent; *e.g.*, tuberculosis, gout, syphilis, anemia, general state of nutrition, mental or physical strains, exhaustion states, etc. This last is of special significance to be recorded of the mother, as bearing on the state of vitality of the infant.

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The collateral heredity of present generation would be covered by history of father, of mother, of brothers, and sisters; also, if possible, of grandparents of each side, uncles, aunts cousins; state of general nutrition (delicate, average, or vigorous).

# TABLES OF WEIGHT AND HEIGHT

*From Birth to Sixteenth Year*

BOYS					GIRLS				
AGE	WEIGHT		HEIGHT		AGE	WEIGHT		HEIGHT	
	Pounds	Kilos	Inches	Cm.		Pounds	Kilos	Inches	Cm.
Birth .....	7.55	3.43	20.6	52.5	Birth .....	7.16	3.26	20.5	52.2
6 months .....	16.0	7.26	25.4	64.8	6 months .....	15.5	7.03	25.0	63.6
12 months .....	21.0	9.54	29.0	73.8	12 months .....	20.5	9.31	28.7	73.2
18 months .....	24.0	10.90	30.0	76.3	18 months .....	23.5	10.68	29.7	75.6
2 years .....	27.0	12.27	32.5	82.8	2 years .....	26.0	11.81	32.5	82.8
3 years .....	32.0	14.55	35.0	89.1	3 years .....	31.0	14.09	35.0	89.1
4 years .....	36.0	16.36	38.0	96.7	4 years .....	35.0	15.90	38.0	96.7
5 years .....	41.2	18.71	41.7	106.0	5 years .....	39.8	18.06	41.4	105.3
6 years .....	45.1	20.48	44.1	112.0	6 years .....	43.8	19.87	43.6	110.9
7 years .....	49.5	22.44	46.2	117.4	7 years .....	48.0	21.78	45.9	116.7
8 years .....	54.5	24.70	48.2	122.3	8 years .....	52.9	24.01	48.0	122.1
9 years .....	60.0	26.58	50.1	127.2	9 years .....	57.5	26.10	49.6	126.0
10 years .....	66.6	30.22	52.2	132.6	10 years .....	64.1	29.07	51.8	131.5
11 years .....	72.4	32.83	54.0	137.2	11 years .....	70.3	31.87	53.8	136.6
12 years .....	79.8	36.21	55.8	141.7	12 years .....	81.4	36.90	57.1	145.2
13 years .....	88.3	40.04	58.2	147.7	13 years .....	91.2	41.36	58.7	149.2
14 years .....	99.3	45.03	61.0	155.1	14 years .....	100.3	45.50	60.3	153.2
15 years .....	110.8	50.26	63.0	159.9	15 years .....	108.4	49.17	61.4	155.9
16 years .....	123.7	56.09	65.6	166.5	16 years .....	113.0	51.24	61.7	156.7

# TABLES OF CIRCUMFERENCE OF HEAD AND CHEST

*From Birth to Sixteenth Year*

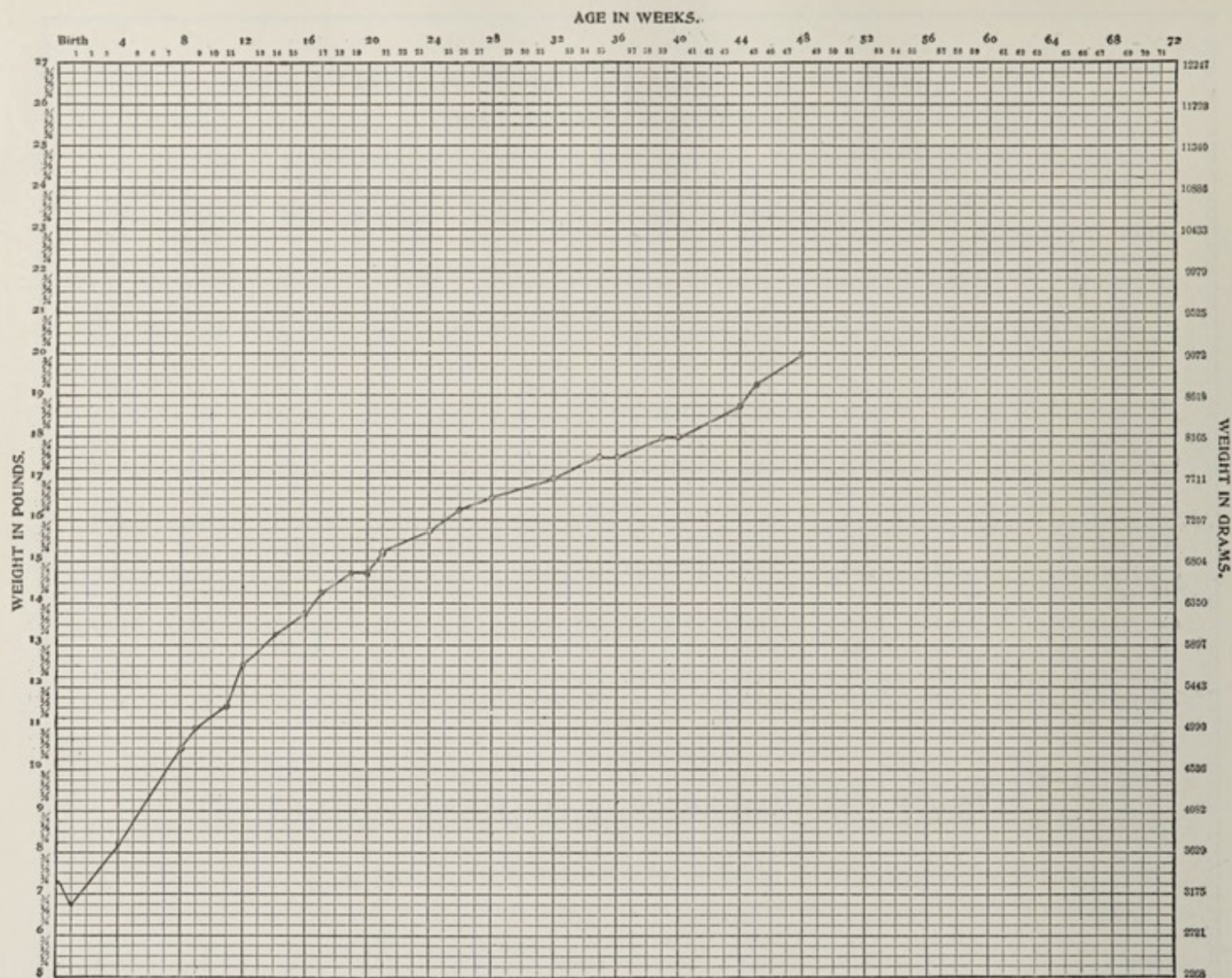
BOYS					GIRLS				
AGE	CHEST		HEAD		AGE	CHEST		HEAD	
	Inches	Cm.	Inches	Cm.		Inches	Cm.	Inches	Cm.
Birth .....	13.4	34.2	13.9	35.5	Birth .....	13.0	33.2	13.5	34.5
6 months .....	16.5	42.0	17.0	43.5	6 months .....	16.1	41.0	16.6	42.2
12 months .....	18.0	45.9	18.0	45.9	12 months .....	17.4	44.4	17.6	44.6
18 months .....	18.5	47.1	18.5	47.1	18 months .....	18.0	45.9	18.0	45.9
2 years .....	19.0	48.4	18.9	48.2	2 years .....	18.5	47.0	18.6	47.2
3 years .....	20.1	51.1	19.3	49.0	3 years .....	19.8	50.5	19.0	48.4
4 years .....	20.7	52.8	19.7	50.3	4 years .....	20.7	52.2	19.5	49.6
5 years .....	21.5	54.8	20.5	52.2	5 years .....	21.0	53.5	20.2	51.3
6 years .....	23.2	59.1	....	....	6 years .....	22.8	58.3	....	....
7 years .....	23.7	60.6	....	....	7 years .....	23.3	59.5	....	....
8 years .....	24.4	62.2	....	....	8 years .....	23.8	60.8	....	....
9 years .....	25.1	63.9	....	....	9 years .....	24.5	62.5	....	....
10 years .....	25.8	65.6	21.0	53.5	10 years .....	24.7	63.0	20.7	52.8
11 years .....	26.4	67.2	....	....	11 years .....	25.8	65.8	....	....
12 years .....	27.0	68.8	....	....	12 years .....	26.8	68.3	....	....
13 years .....	27.7	70.6	....	....	13 years .....	28.0	71.3	....	....
14 years .....	28.8	73.3	....	....	14 years .....	29.2	74.1	....	....
15 years .....	30.0	76.6	21.8	55.5	15 years .....	30.3	76.8	21.5	54.8
16 years .....	31.2	79.2	....	....	16 years .....	30.8	78.8	....	....

"The observations of Boas (Science, Apr. 12, 1895) upon 4,319 children over six years old show that first born exceed children born at a later period both in height and weight.

Weights of first four months are without clothes; five years and after, clothes are included.

(From L. Emmett Holt's "Diseases of Infancy and Childhood.")





Weight-chart and Average Weight-curve. (Suggested by Dr. W. L. Carr.)

After weighing put a dot where the line from the infant's weight crosses the line from its age in weeks. Connect all the dots, and the weight-line is the result.

### FOR A BOY:

Name \_\_\_\_\_

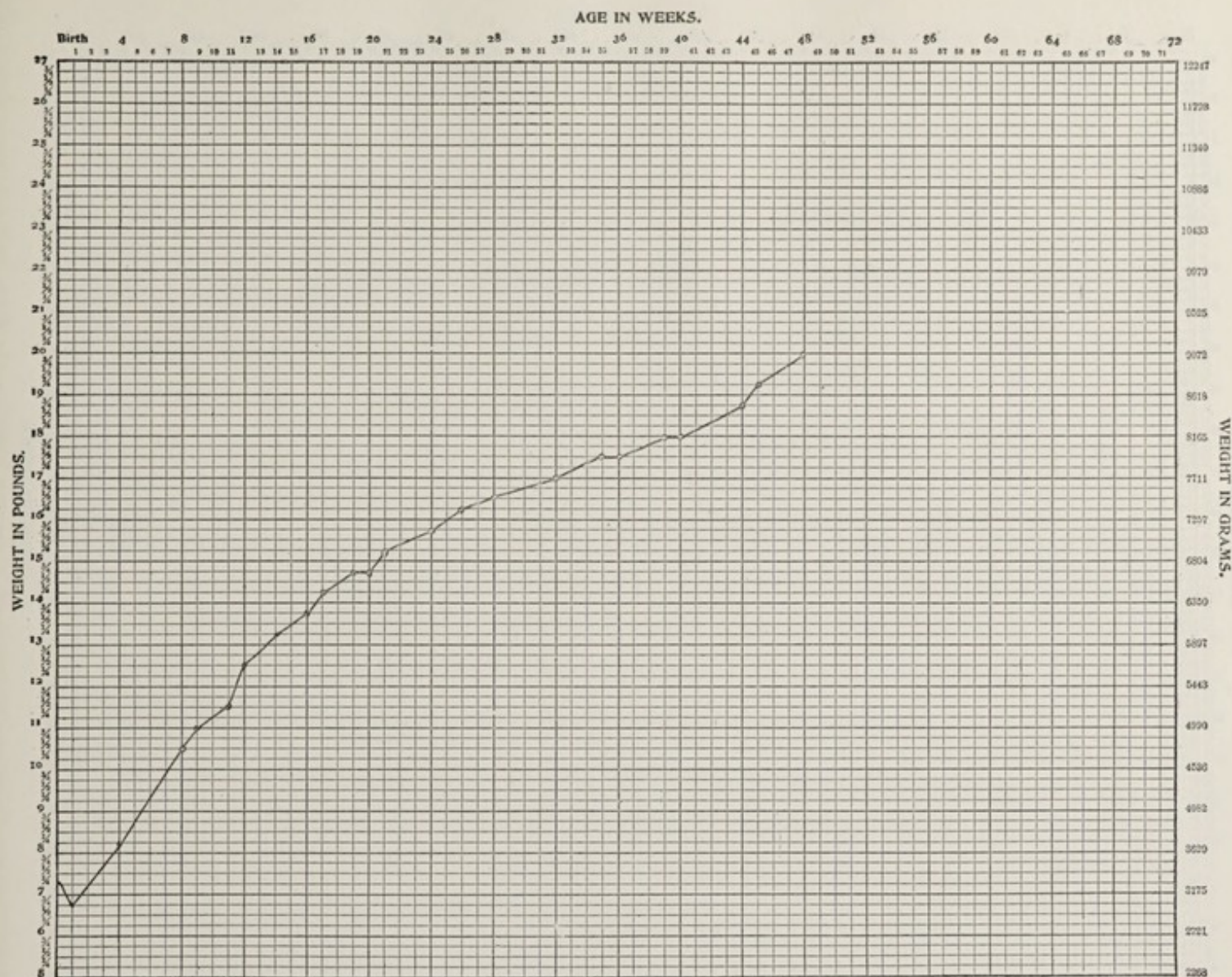
AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	29.0	73.8			21.0	9.54		
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11 "	54.0	137.2			72.4	32.83		
12 "	55.8	141.7			79.8	36.21		
13 "	58.2	147.7			88.3	40.04		
14 "	61.0	155.1			99.3	45.03		
15 "	63.0	159.9			110.8	50.26		

### FOR A GIRL:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	28.7	73.2			20.5	9.31		
2 years	32.5	82.8			26.0	11.81		
3 "	35.0	89.1			31.0	14.09		
4 "	38.0	96.7			35.0	15.90		
5 "	41.4	105.3			39.8	18.06		
6 "	43.6	110.9			43.8	19.87		
7 "	45.9	116.7			48.0	21.78		
8 "	48.0	122.1			52.9	24.01		
9 "	49.6	126.0			57.5	26.10		
10 "	51.8	131.5			64.1	29.07		
11 "	53.8	136.6			70.3	31.87		
12 "	57.1	145.2			81.4	36.90		
13 "	58.7	149.2			91.2	41.36		
14 "	60.3	153.2			100.3	45.50		
15 "	61.4	159.9			108.4	49.17		





### FOR A BOY:

Name \_\_\_\_\_

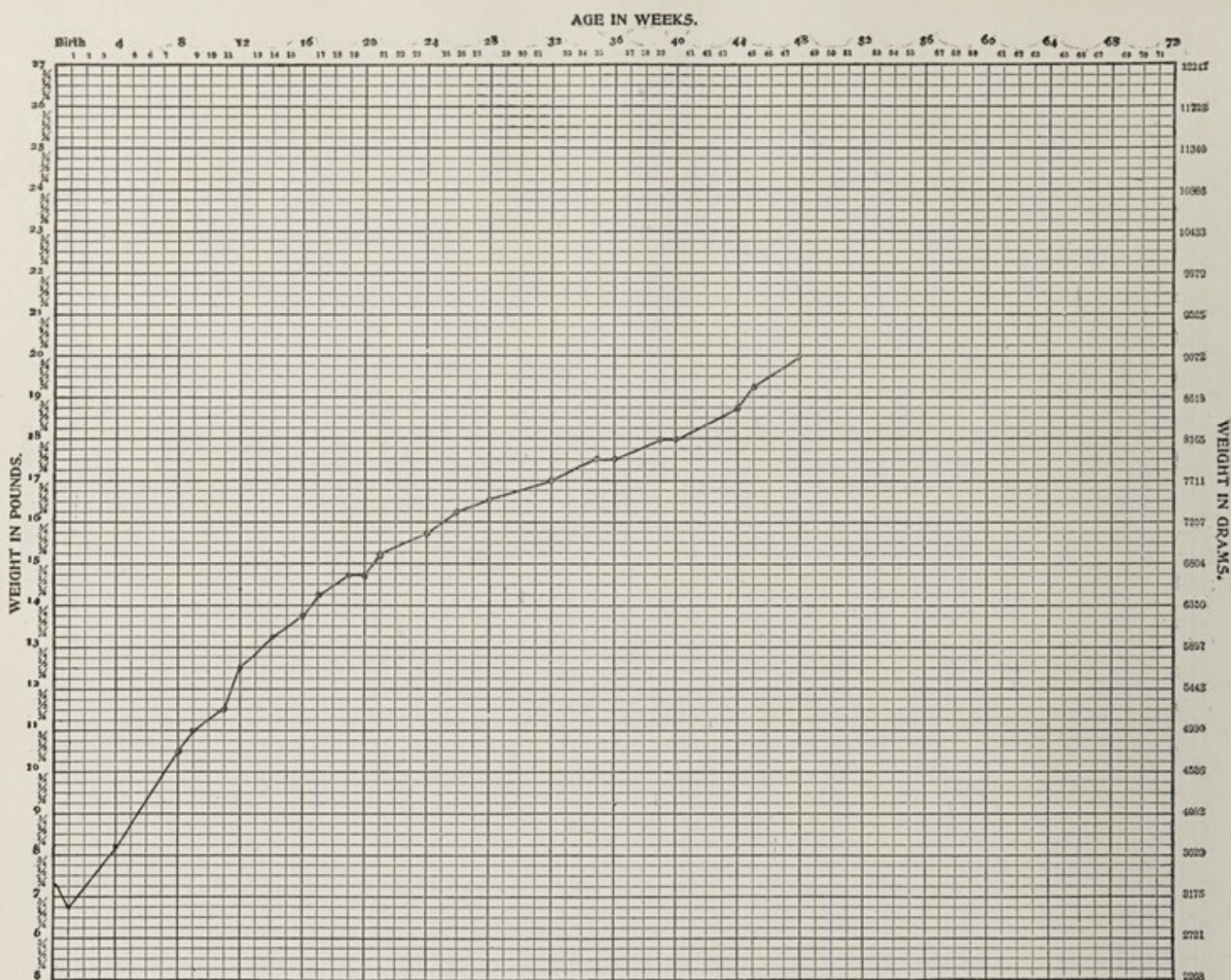
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	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
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After weighing put a dot where the line from the infant's weight crosses the line from its age in weeks. Connect all the dots, and the weight-line is the result.

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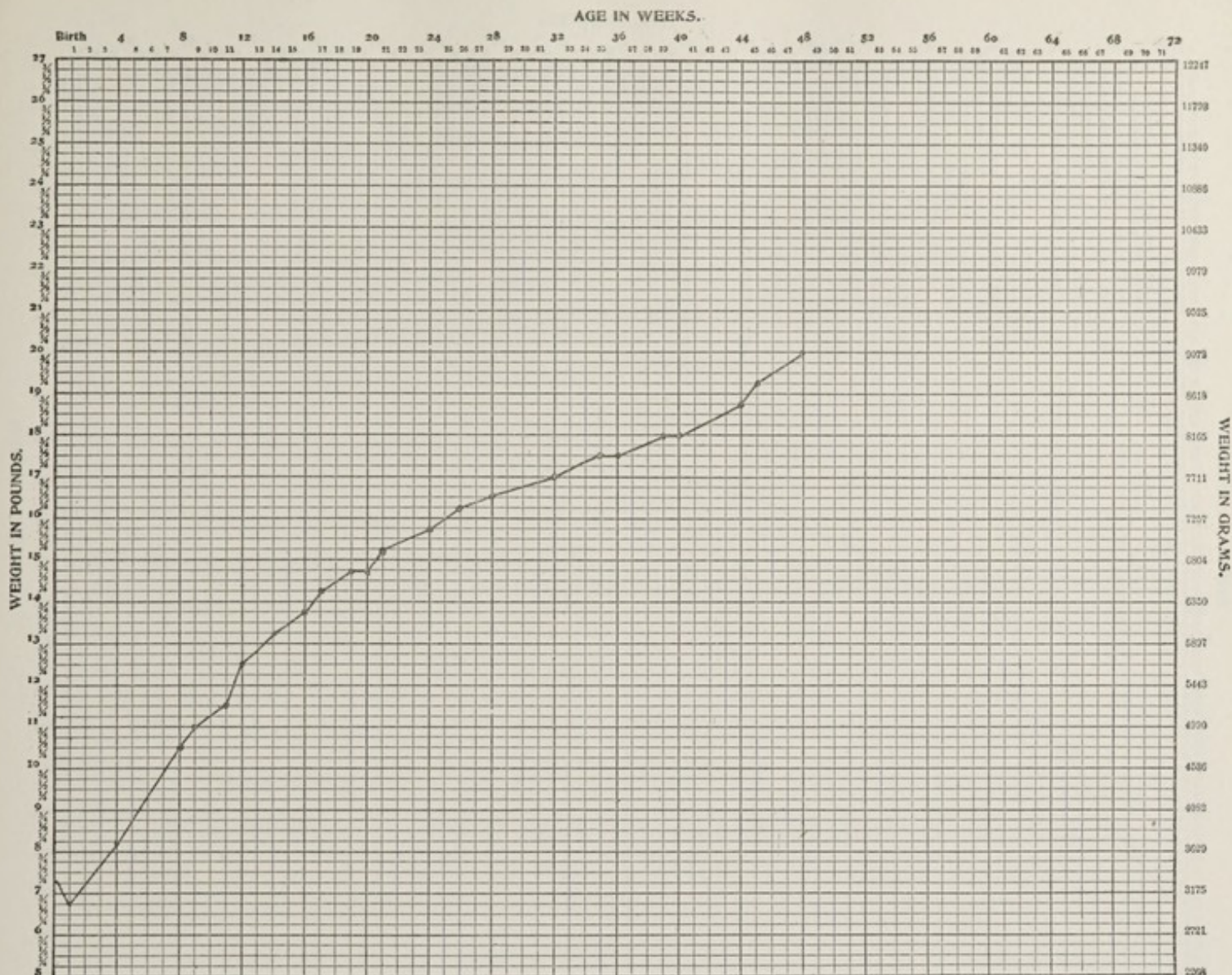
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4 "	38.0	96.7			36.0	16.36		
5 "	41.7	106.0			41.2	18.71		
6 "	44.1	112.0			45.1	20.48		
7 "	46.2	117.4			49.5	22.44		
8 "	48.2	122.3			54.5	24.70		
9 "	50.1	127.2			60.0	26.58		
10 "	52.2	132.6			66.6	30.22		
11 "	54.0	137.2			72.4	32.83		
12 "	55.8	141.7			79.8	36.21		
13 "	58.2	147.7			88.3	40.04		
14 "	61.0	155.1			99.3	45.03		
15 "	63.0	159.9			110.8	50.26		

### FOR A GIRL:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	28.7	73.2			20.5	9.31		
2 years	32.5	82.8			26.0	11.81		
3 "	35.0	89.1			31.0	14.09		
4 "	38.0	96.7			35.0	15.90		
5 "	41.4	105.3			39.8	18.06		
6 "	43.6	110.9			43.8	19.87		
7 "	45.9	116.7			48.0	21.78		
8 "	48.0	122.1			52.9	24.01		
9 "	49.6	126.0			57.5	26.10		
10 "	51.8	131.5			64.1	29.07		
11 "	53.8	136.6			70.3	31.87		
12 "	57.1	145.2			81.4	36.90		
13 "	58.7	149.2			91.2	41.36		
14 "	60.3	153.2			100.3	45.50		
15 "	61.4	159.9			108.4	49.17		





Weight-chart and Average Weight-curve. (Suggested by Dr. W. L. Carr.)

After weighing put a dot where the line from the infant's weight crosses the line from its age in weeks. Connect all the dots, and the weight-line is the result.

### FOR A BOY:

Name \_\_\_\_\_

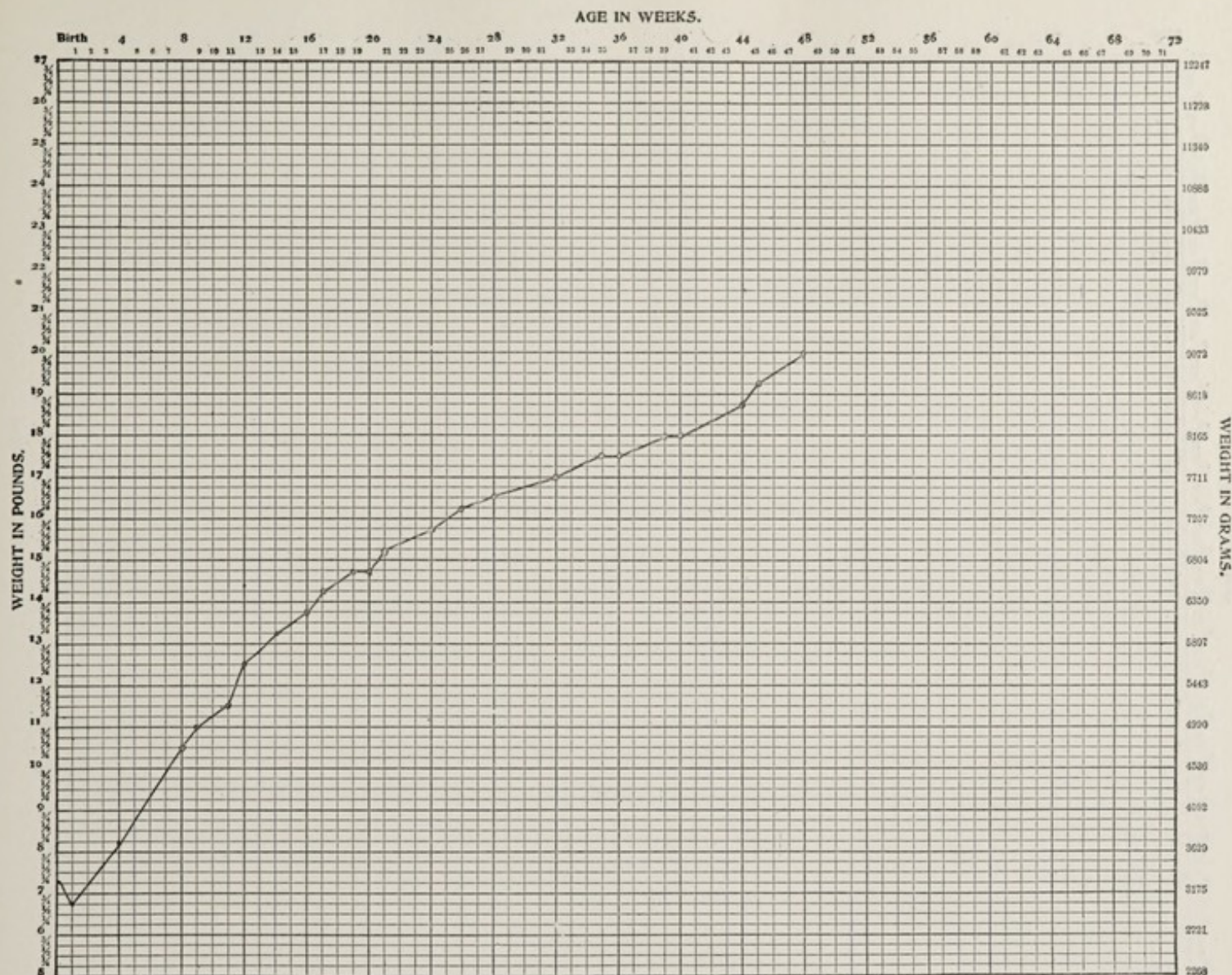
### FOR A GIRL:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	29.0	73.8			21.0	9.54		
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AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	28.7	73.2			20.5	9.31		
2 years	32.5	82.8			26.0	11.81		
3 "	35.0	89.1			31.0	14.09		
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Weight-chart and Average Weight-curve. (Suggested by Dr. W. L. Carr.)

After weighing put a dot where the line from the infant's weight crosses the line from its age in weeks. Connect all the dots, and the weight-line is the result.

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Name \_\_\_\_\_

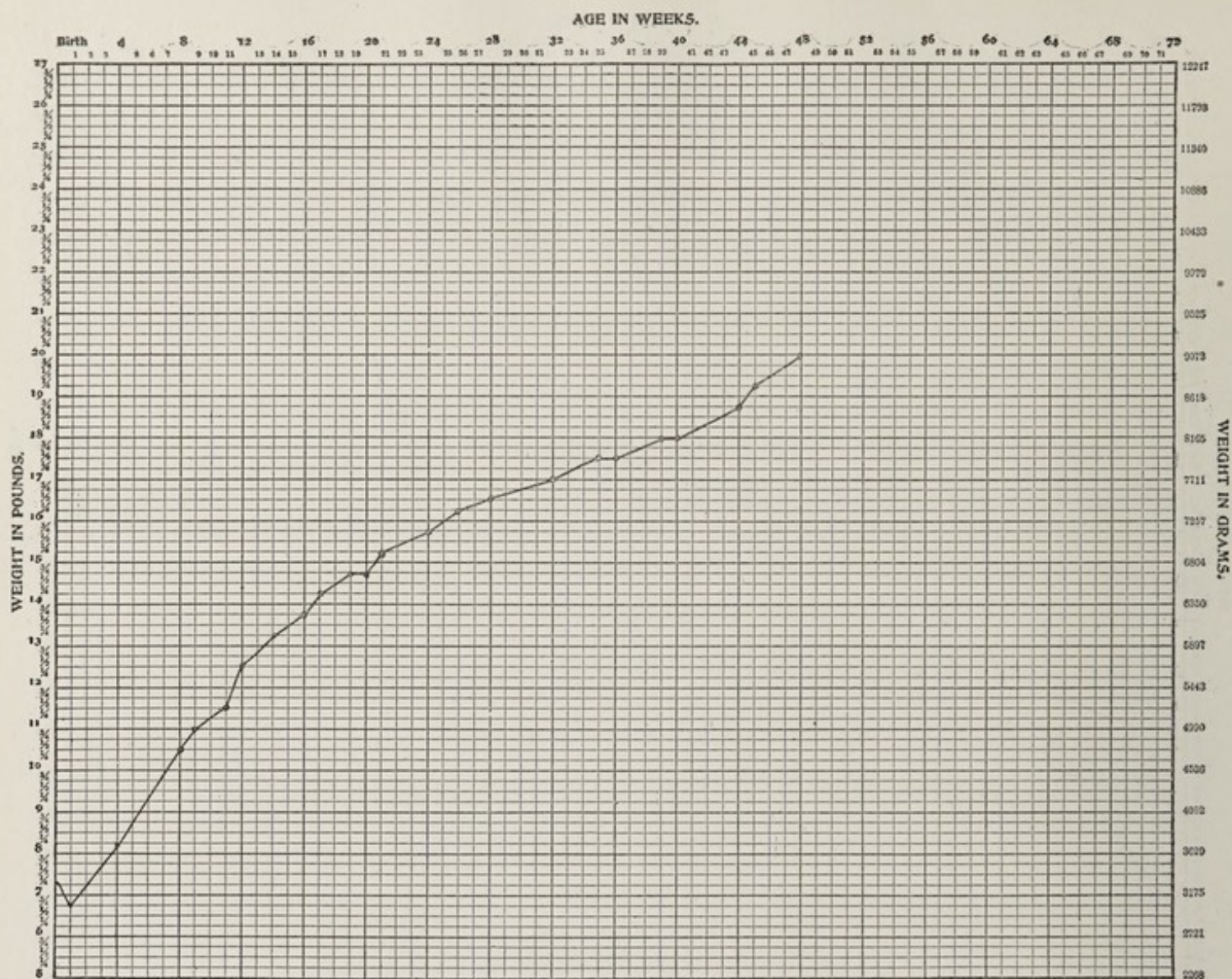
AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
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### FOR A GIRL:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
1 year	28.7	73.2			20.5	9.31		
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### FOR A BOY:

Name \_\_\_\_\_

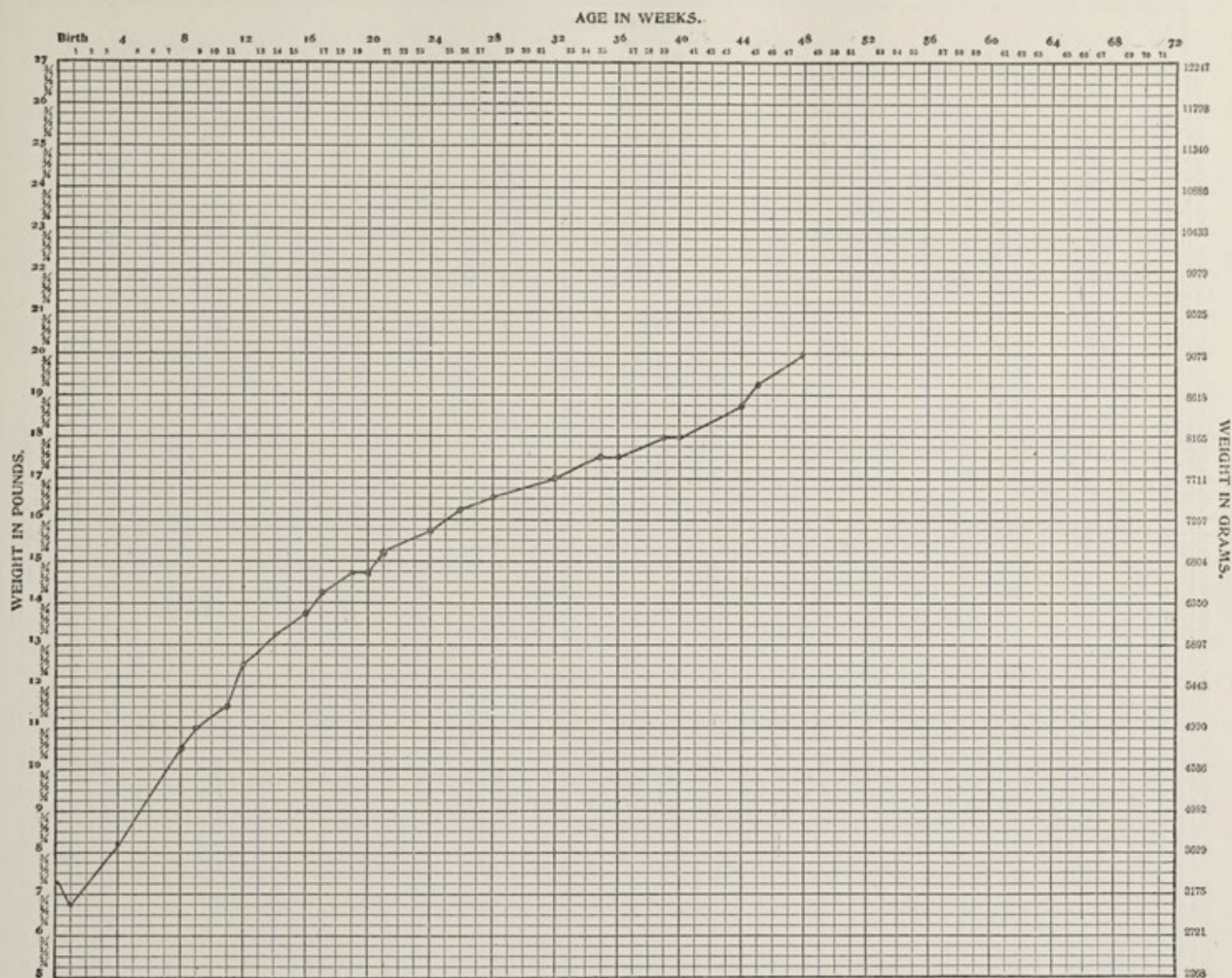
AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
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### FOR A GIRL:

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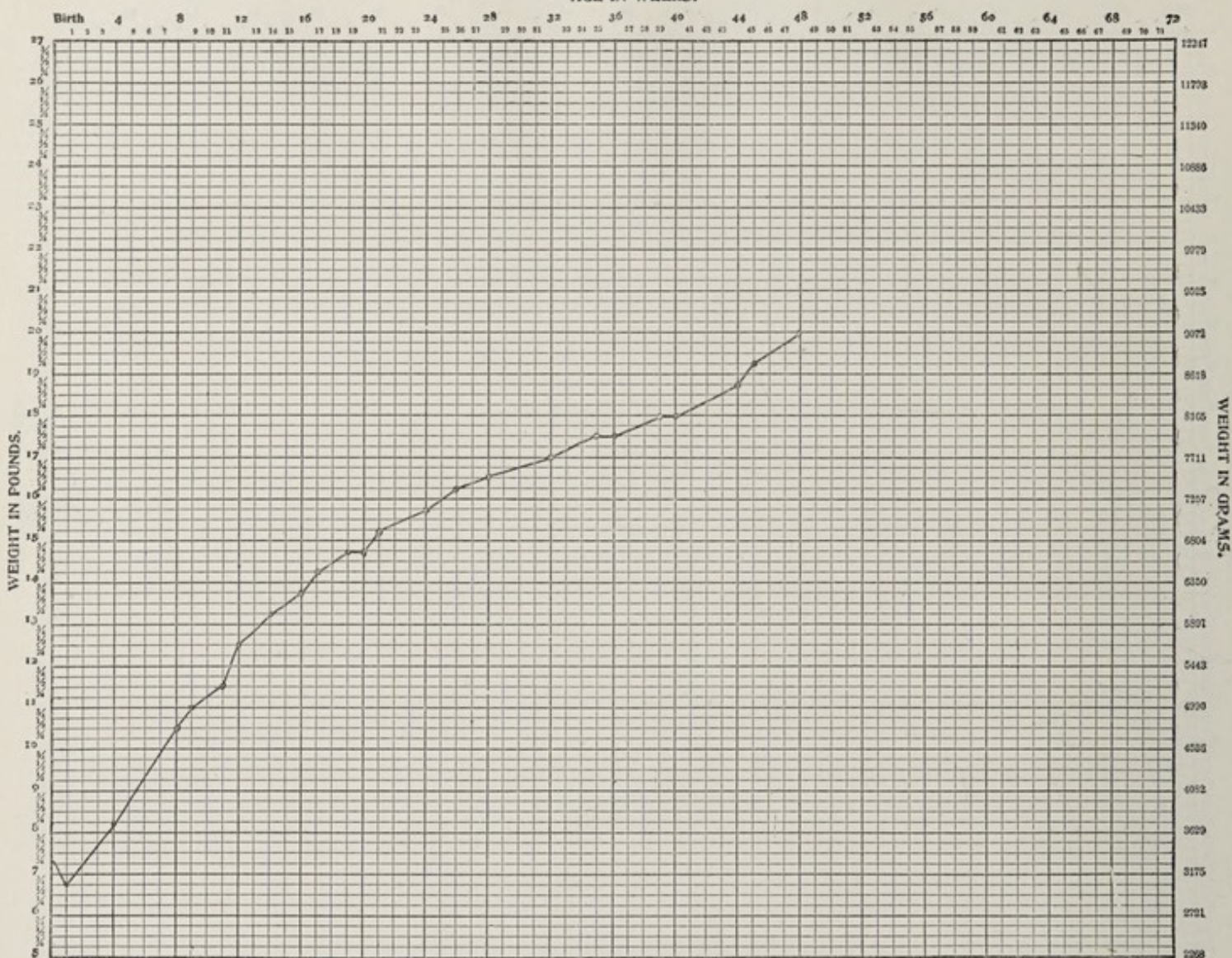
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AGE IN WEEKS.



Weight-chart and Average Weight-curve. (Suggested by Dr. W. L. Carr.)

After weighing put a dot where the line from the infant's weight crosses the line from its age in weeks. Connect all the dots, and the weight-line is the result.

FOR A BOY:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
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FOR A GIRL:

Name \_\_\_\_\_

AGE	AVER. HEIGHTS		HEIGHT		AVER. WEIGHT		WEIGHT	
	Inches	Cm.	Inches	Cm.	Pounds	Kilos	Pounds	Kilos
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14 "	60.3	153.2			100.3	45.50		
15 "	61.4	159.9			108.4	49.17		



## RECORD OF WEIGHTS AT FIVE-YEAR INTERVALS

Set down the maximum weight reached, and, if possible, the minimum also, any time during these periods; indicate whether pounds or kilos are used.

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]



## RECORD OF WEIGHTS AT FIVE-YEAR INTERVALS

Set down the maximum weight reached, and, if possible, the minimum also, any time during these periods; indicate whether pounds or kilos are used.

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

NAME:

[illegible]

## BLANK FOR OBSERVATIONS AND FINDINGS OF SPECIALISTS

It is recommended that any or all significant findings be personally inscribed, reference made in Index to page thus used; that each entry follow the form of: Name ....., Date ....., Age at the time; a succinct clear description of findings; giving, *e.g.*, formula of refraction (in case of eye), also brief description of clinical phenomena accompanying; outline of treatment, prognosis, and (later) degree of persistence or cure; and whatever else may be deemed worthy of preservation; the whole being signed by the physician. So of findings of other specialists, giving exact particularizations.



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## BLANK FOR CLINICAL LABORATORY FINDINGS

It is recommended that the attending physician personally inscribe and sign important items or epitomes learned from laboratory examinations of, *e.g.*, urine, blood, sputum, gastric contents, feces, saliva, transudates, exudates, histology of tissues, tumors, bacteriologic examinations, and whatsoever other data are obtainable; set down opposite name....., date .....; also brief memoranda and comments on accompanying phenomena.

*N. B.*—It is recommended that in urinalysis the following points be noted: Name, date, clinical condition (briefly), specific gravity, reaction, appearance, color, odor. Sugar (specify tests used); Albumin (specify tests used; if found, then use some of the tests for renal function); Urea, quantitative (tests used); Urates, plus or minus; Bile pigment (tests used). Acetone bodies: Sediment, casts (form and relative number); Blood (if fresh or old); Leucocytes; Pus; Crystals (uric acid, oxalates, phosphates); Bacteria, etc.

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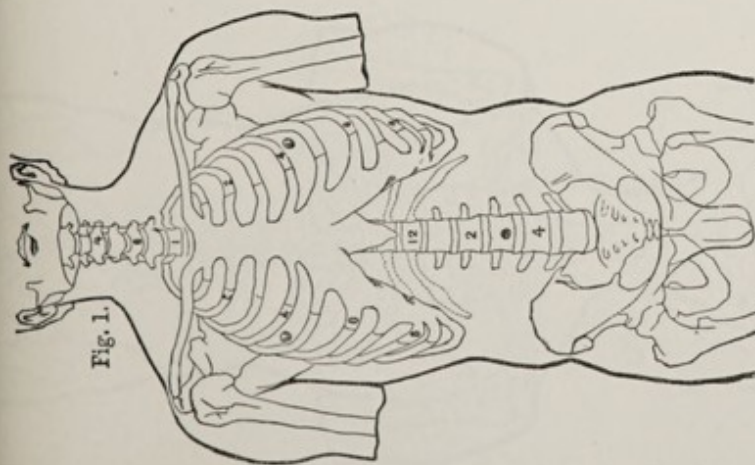


Fig. 1.

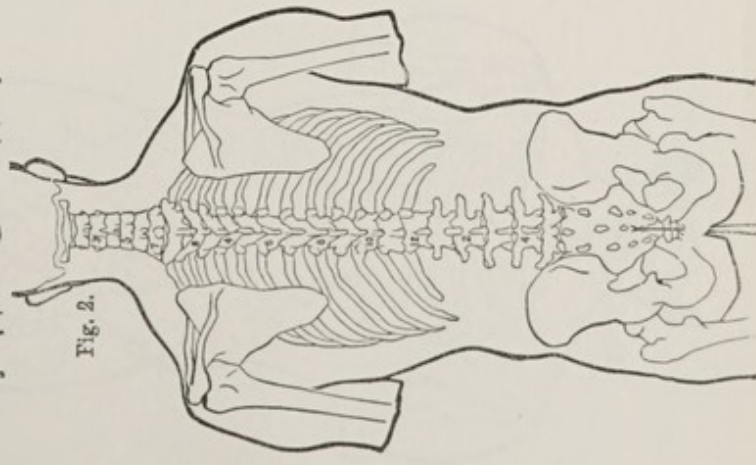


Fig. 2.



Fig. 3.

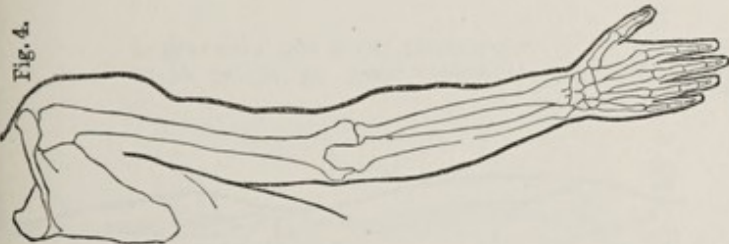


Fig. 4.

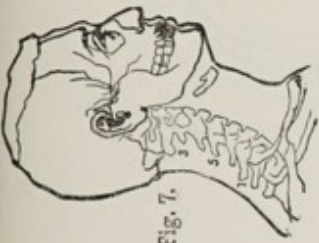


Fig. 7.



Fig. 8.



Fig. 10.

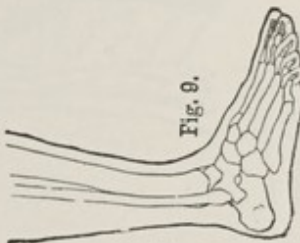


Fig. 9.

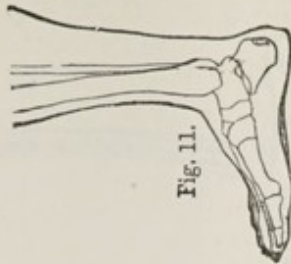


Fig. 11.



Fig. 5.



Fig. 6.

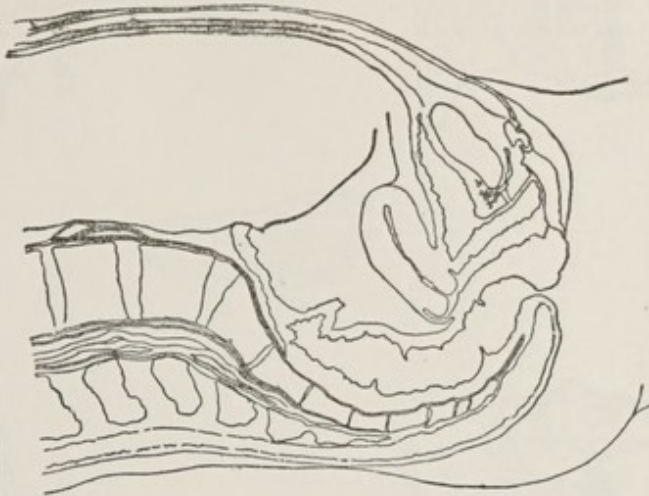


Fig. 12.

Designed by Dr. W. W. Keen, copyrighted 1893.  
P. Blakiston, Son & Co., Philadelphia.

Mark, in red ink, the location of injuries and of operations performed.  
Specify right or left when the diagrams show only one side.



# ANATOMICAL CHART

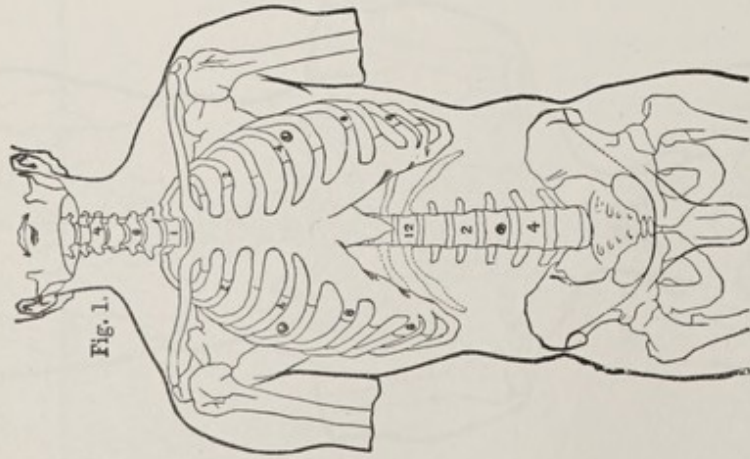


Fig. 1.

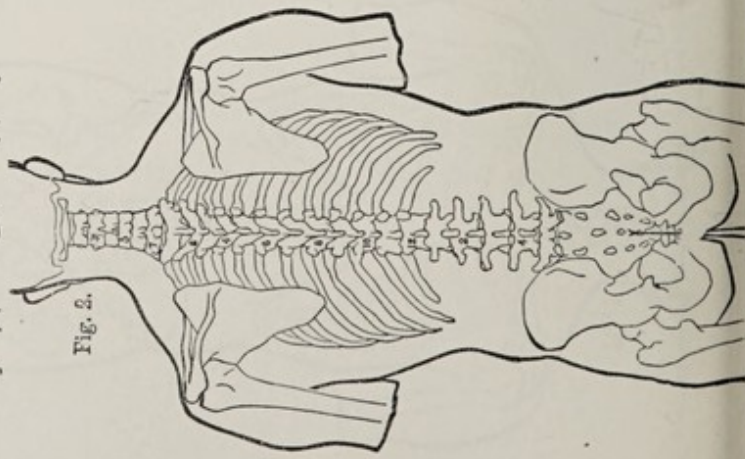


Fig. 2.

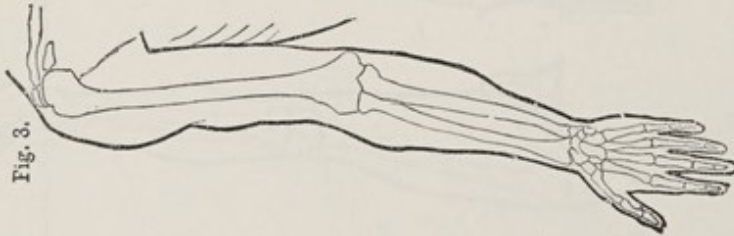


Fig. 3.

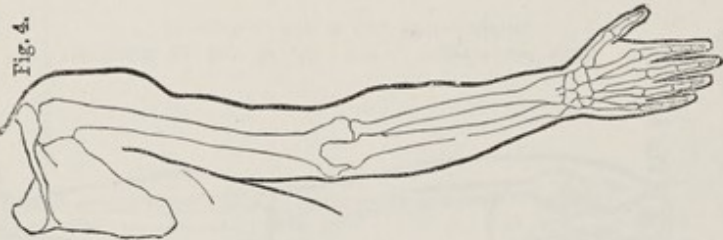


Fig. 4.



Fig. 10.

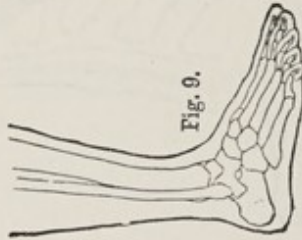


Fig. 9.

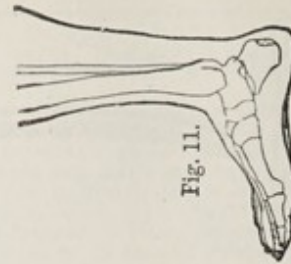


Fig. 11.

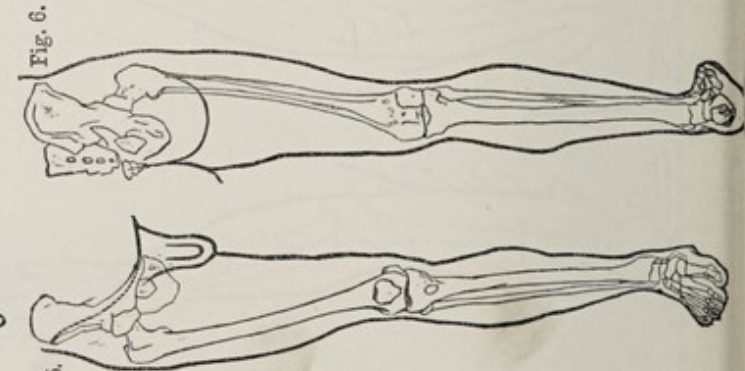


Fig. 5.

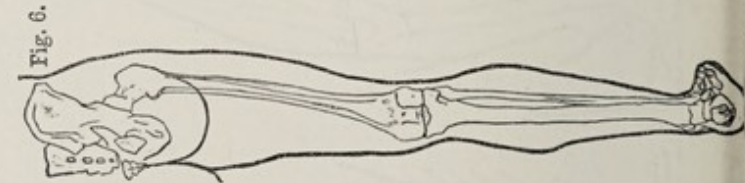


Fig. 6.

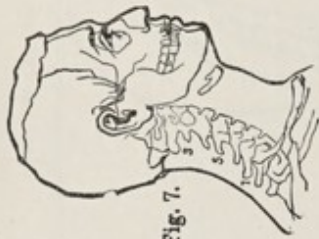


Fig. 7.



Fig. 8.

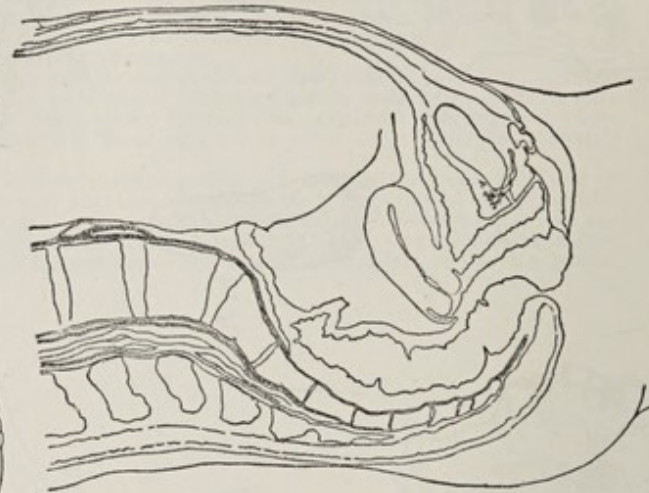
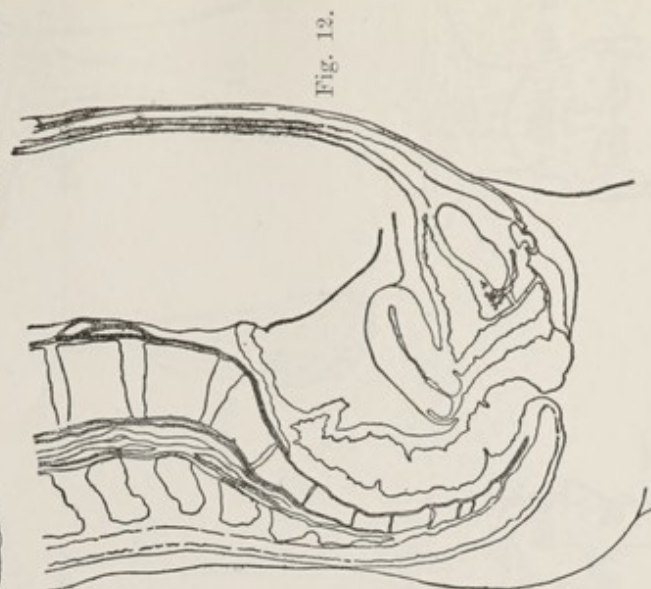
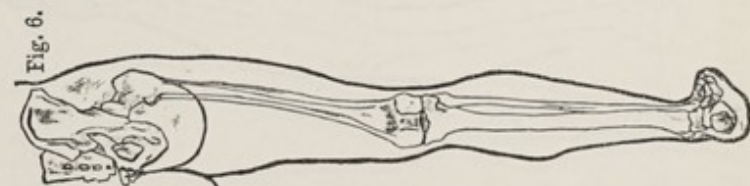
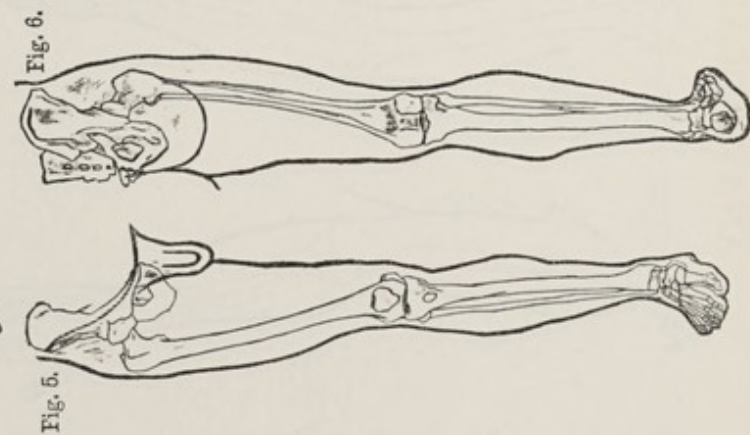
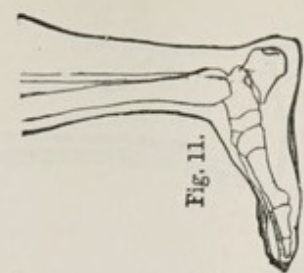
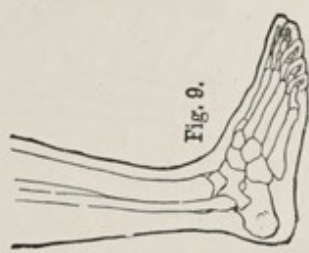
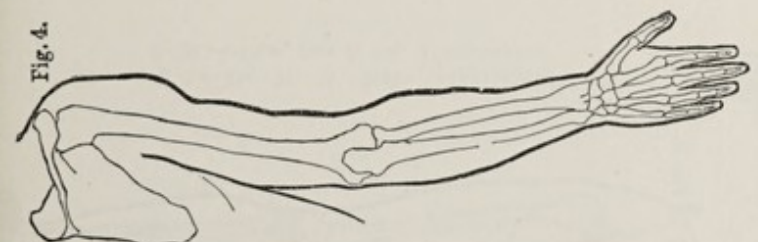
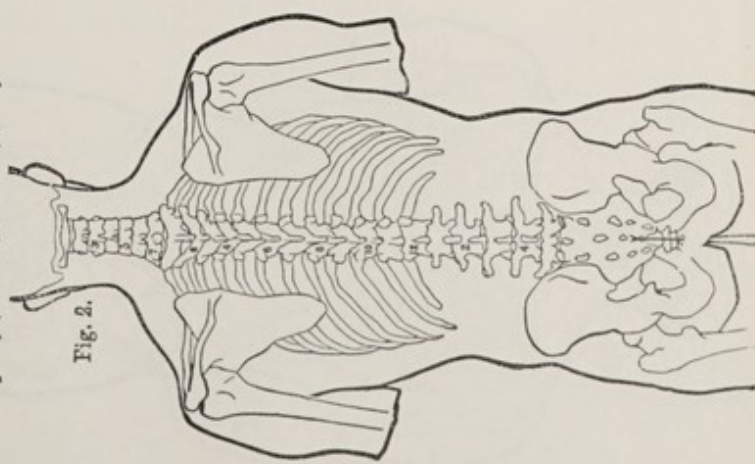
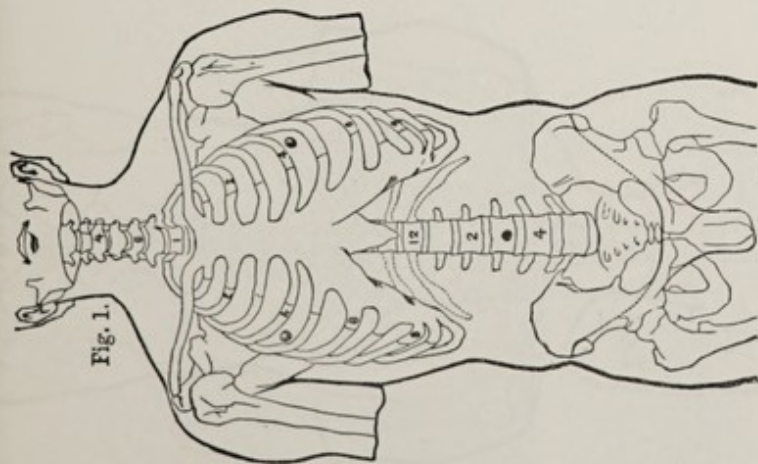


Fig. 12.

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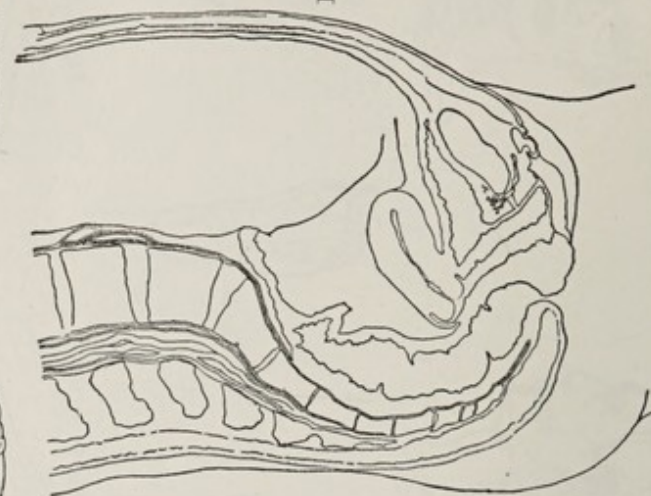
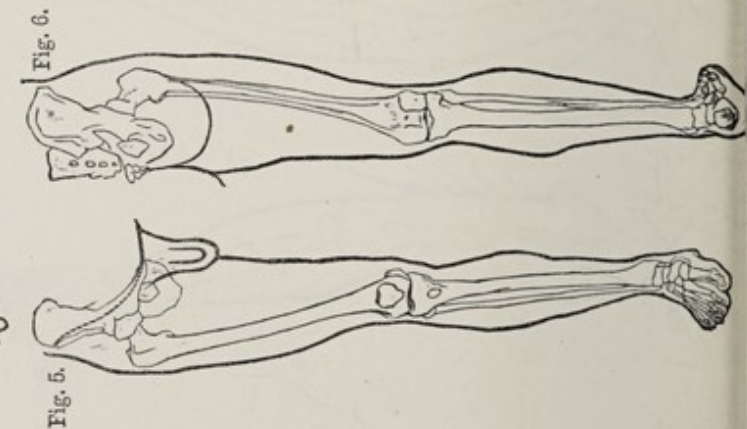
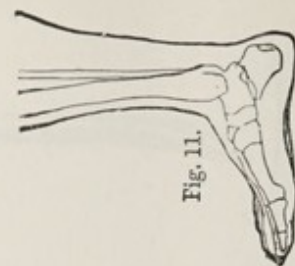
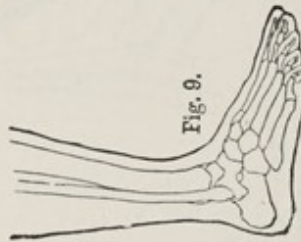
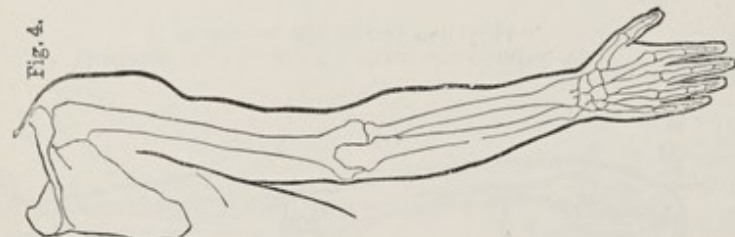
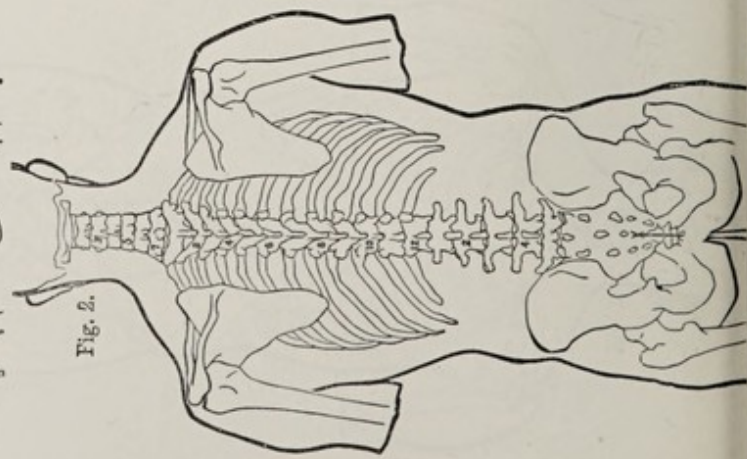
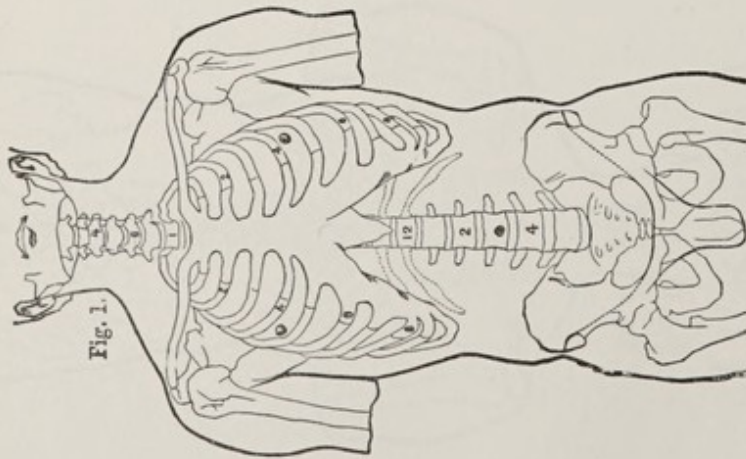




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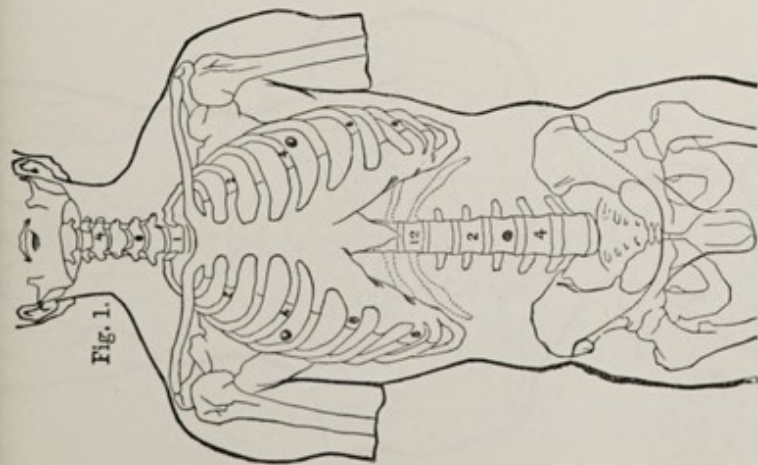


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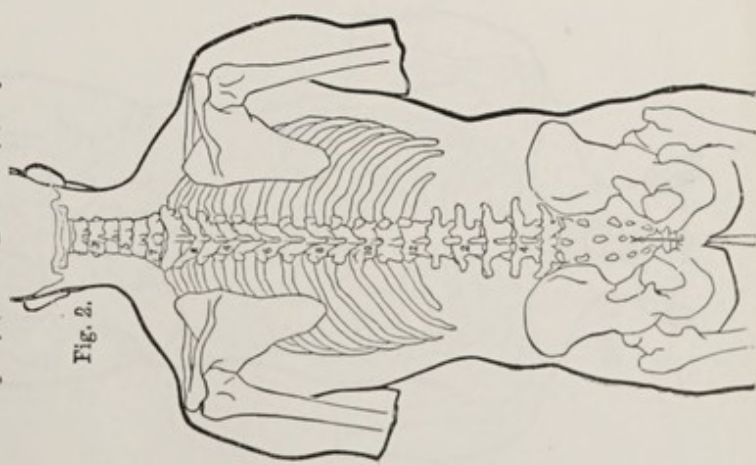


Fig. 2.



Fig. 3.

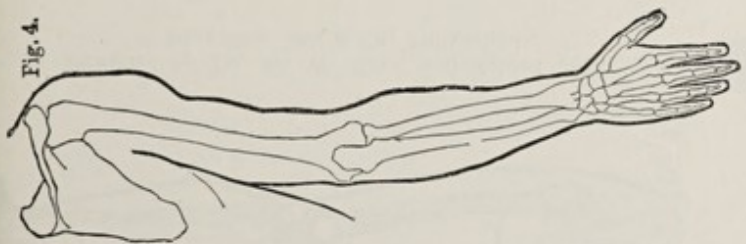


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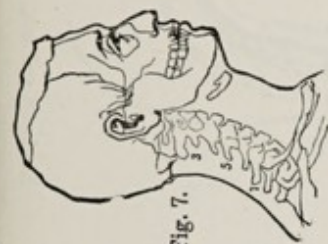


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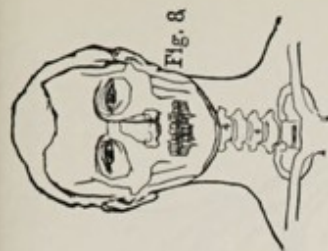


Fig. 8.



Fig. 10.

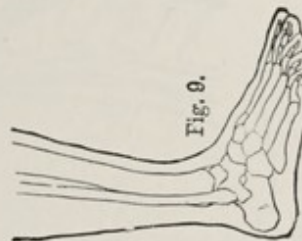


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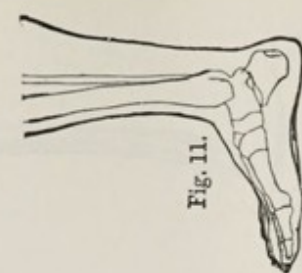


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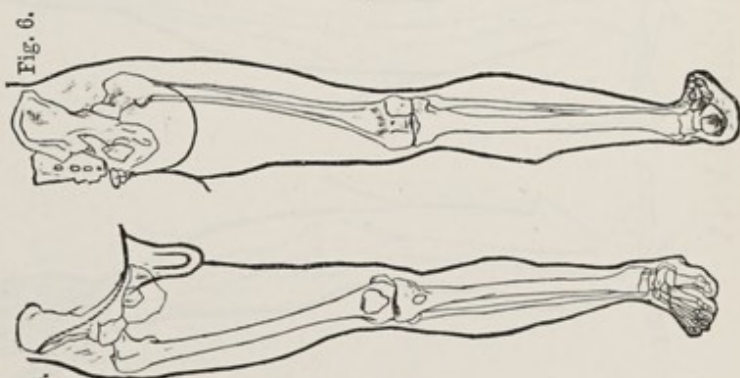


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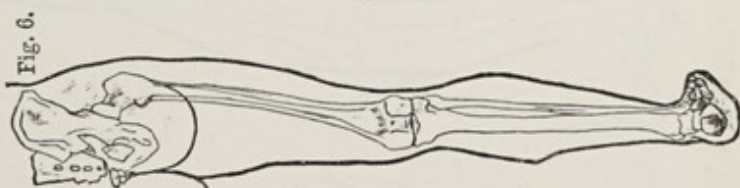


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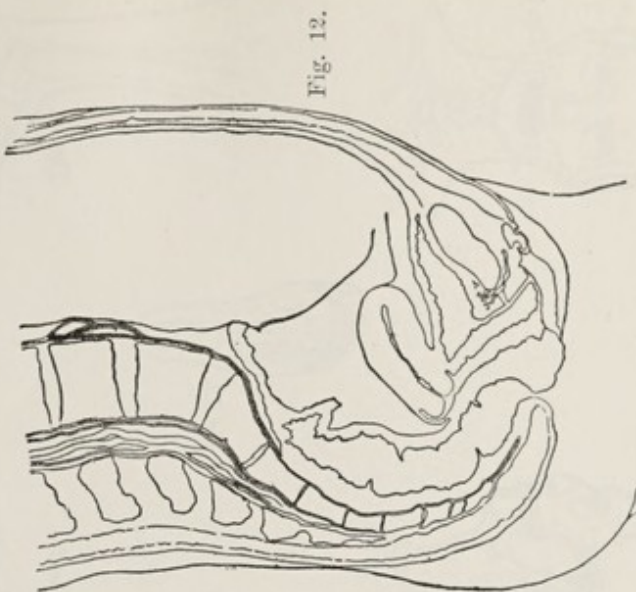


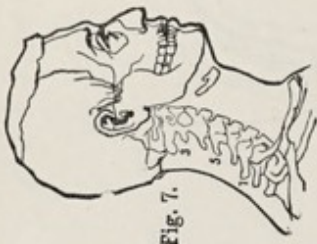
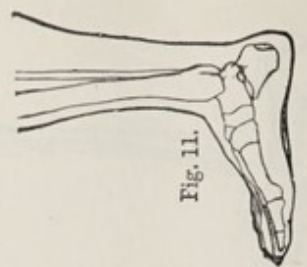
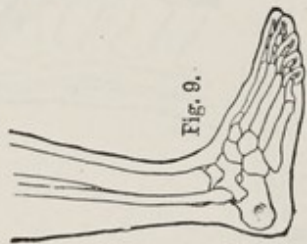
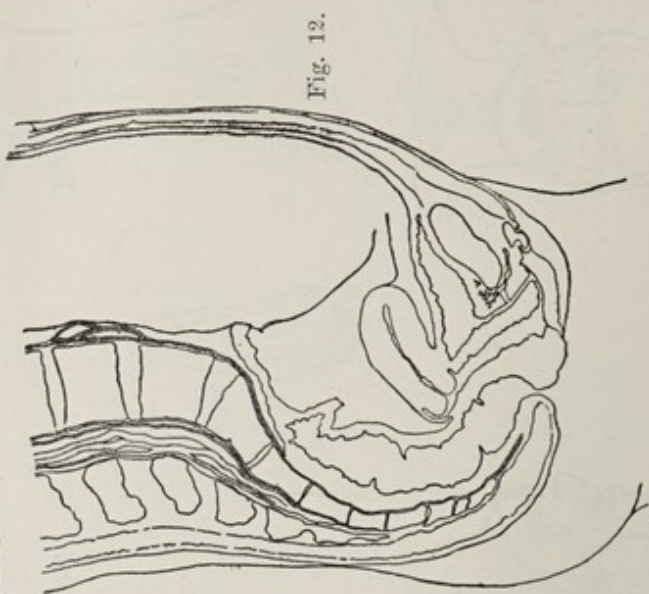
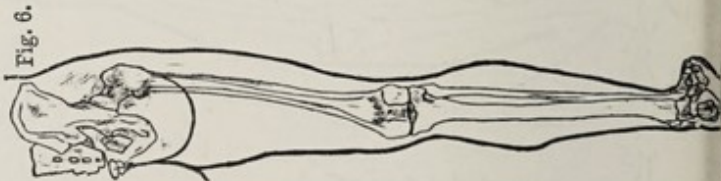
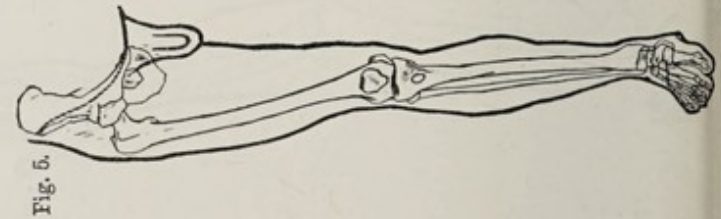
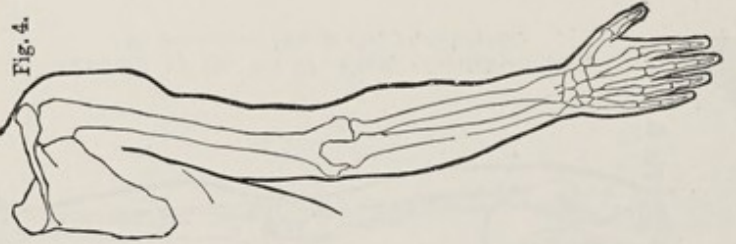
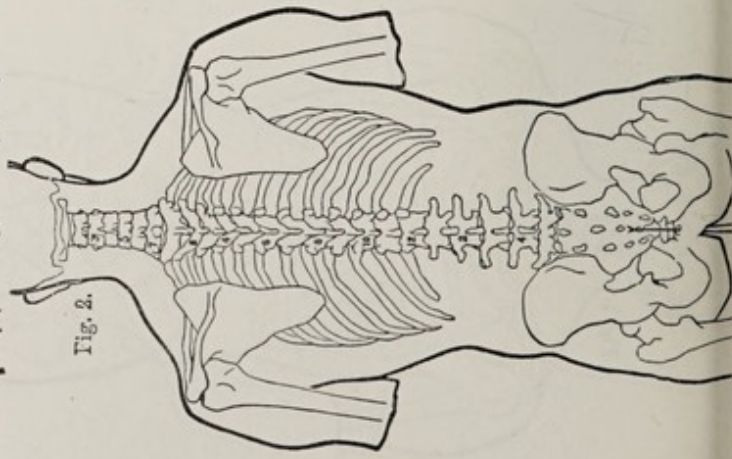
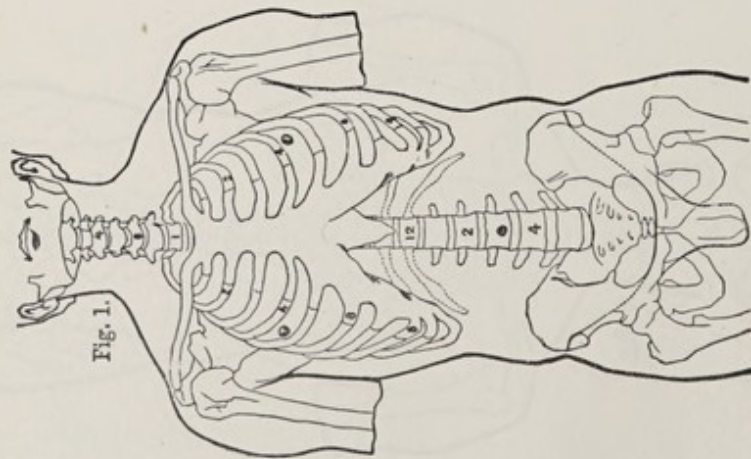
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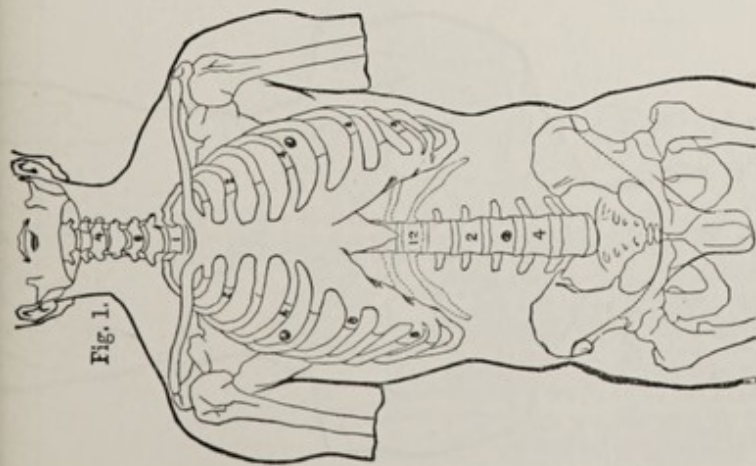


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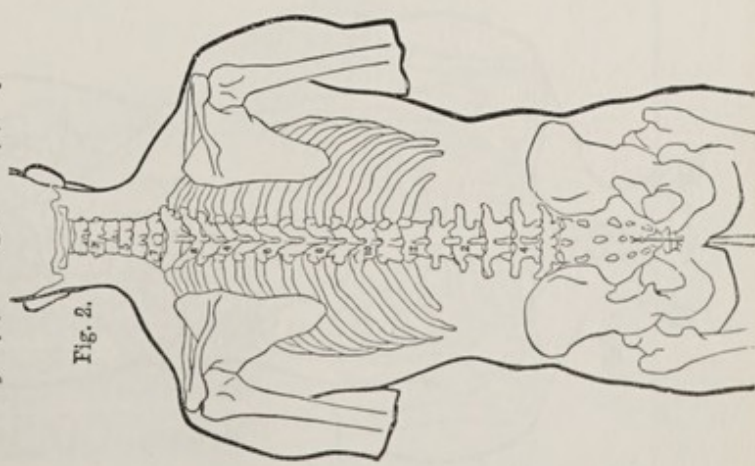


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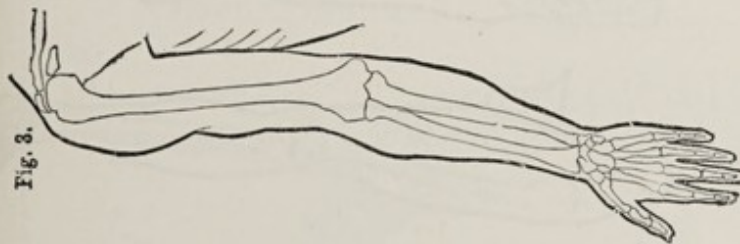


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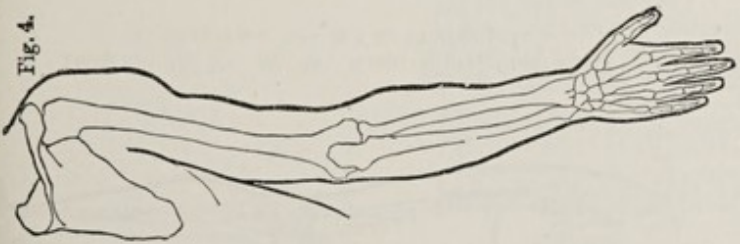


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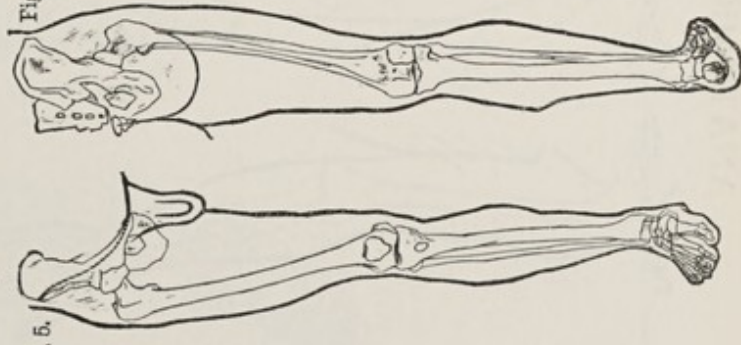


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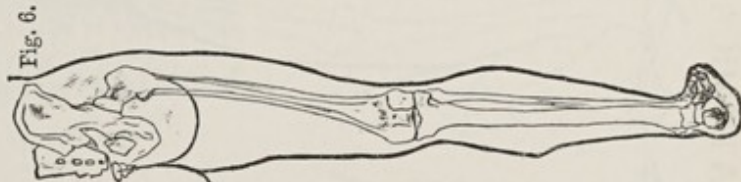


Fig. 6.



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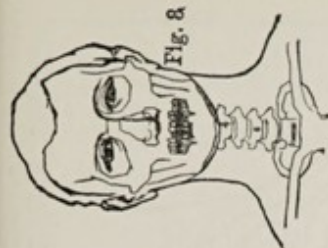


Fig. 8.



Fig. 9.

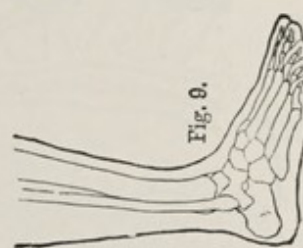


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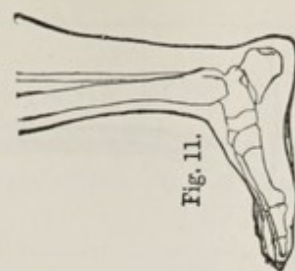


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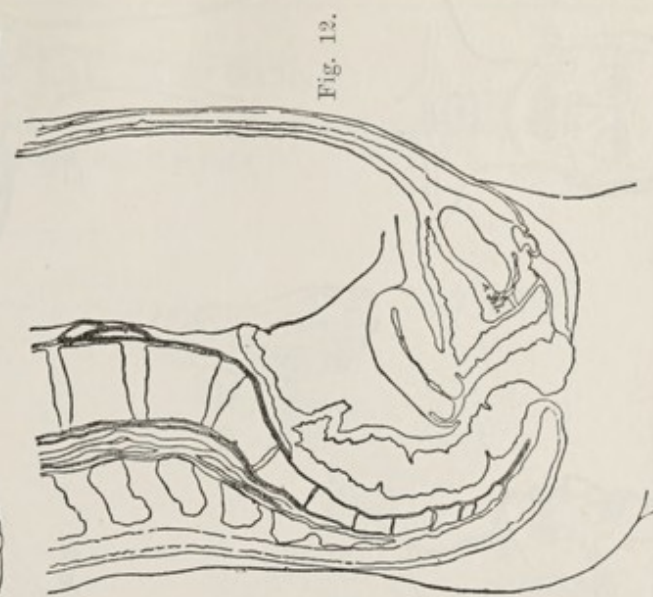


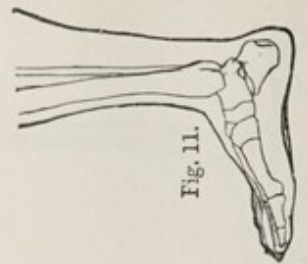
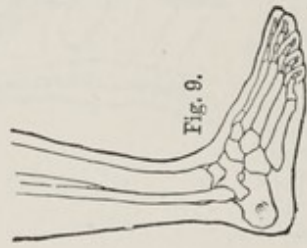
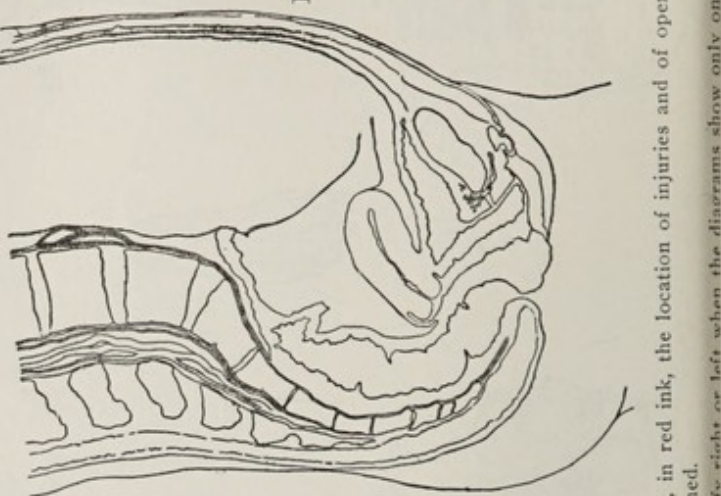
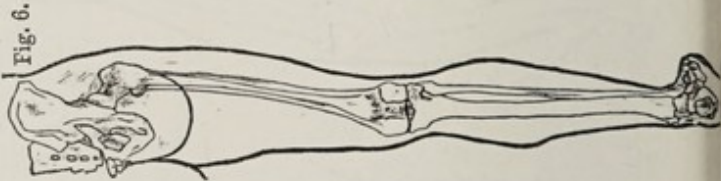
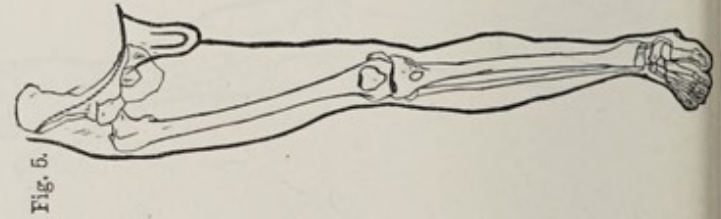
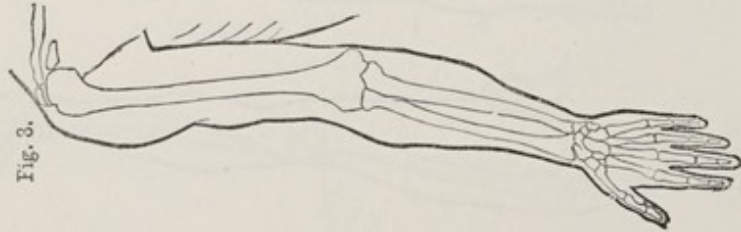
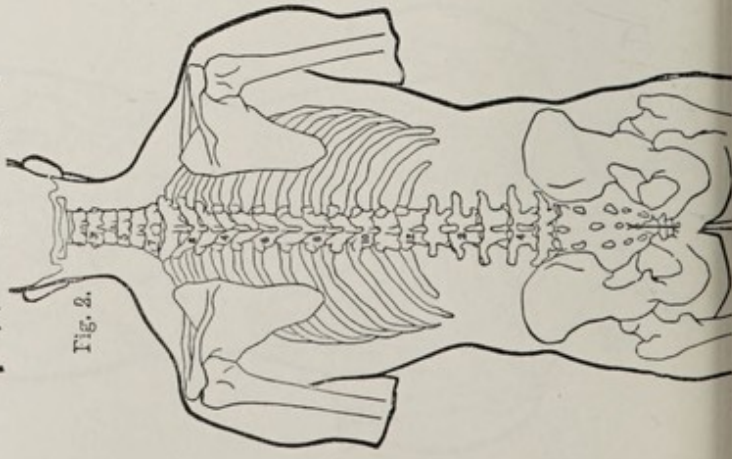
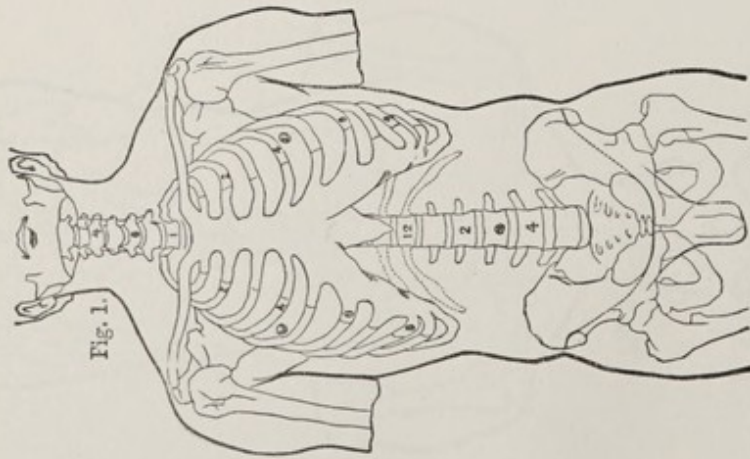
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# ANATOMICAL CHART



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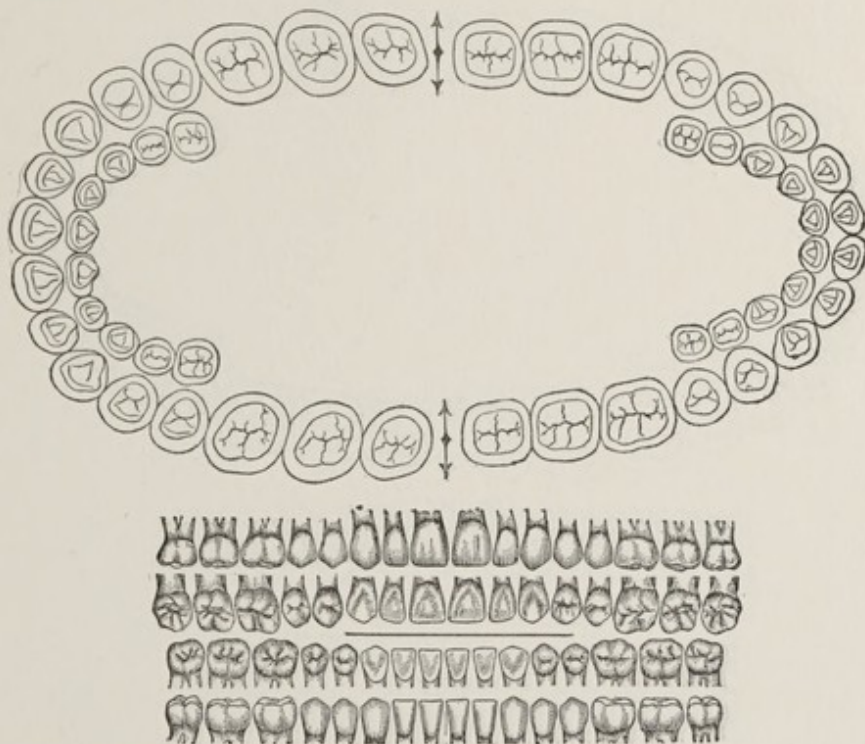
Mark, in red ink, the location of injuries and of operations performed.  
Sacral, right or left when the diagrams show only one side.



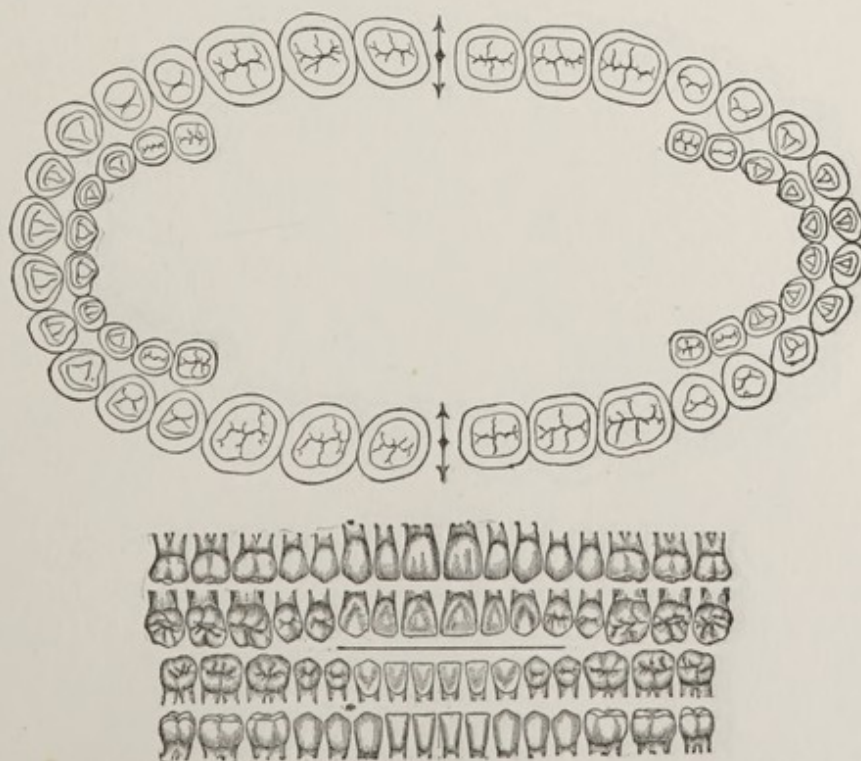
## DIAGRAMS FOR DENTAL SURGEONS

It is recommended that the Dental Surgeon make a record of all important conditions and operations, adding his name and the date.

Name: \_\_\_\_\_



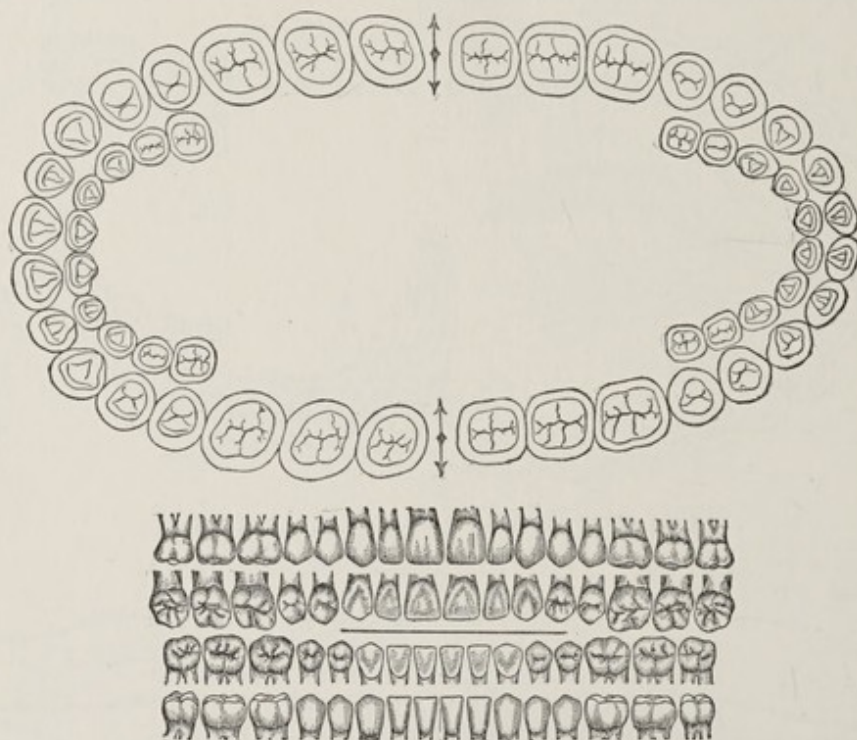
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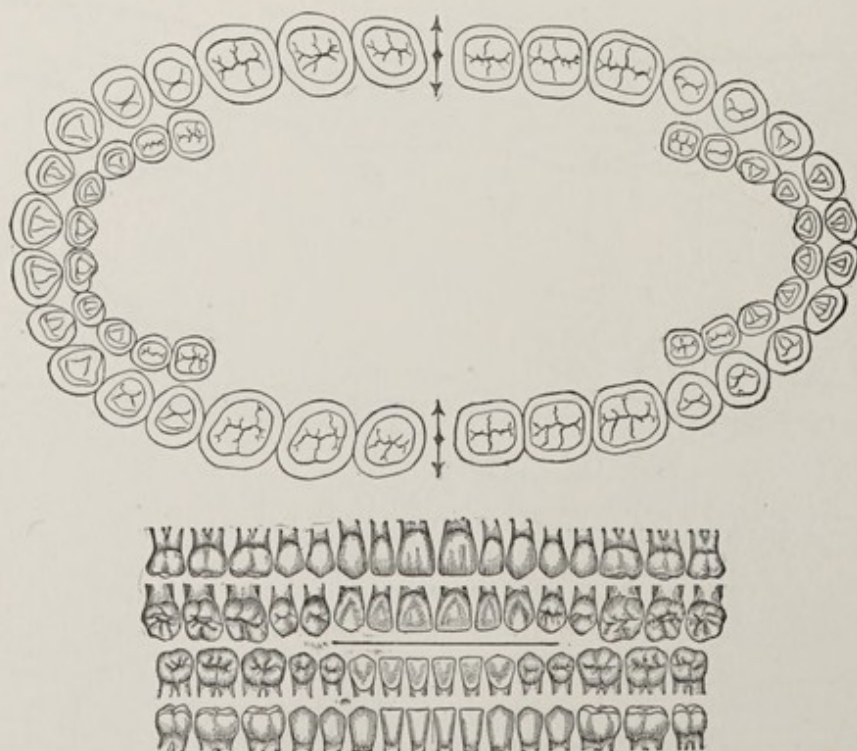
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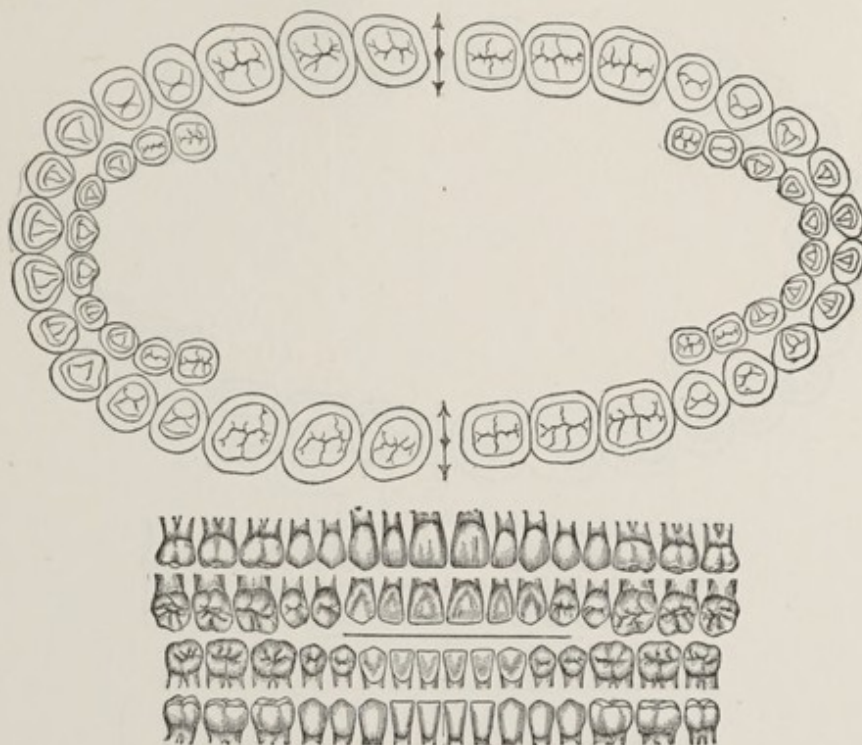




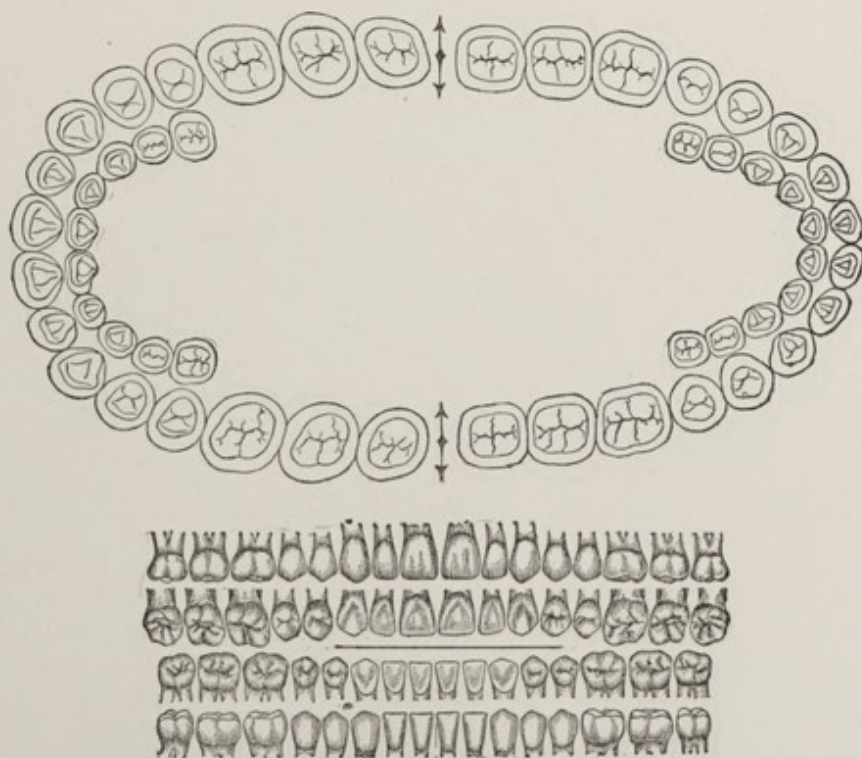
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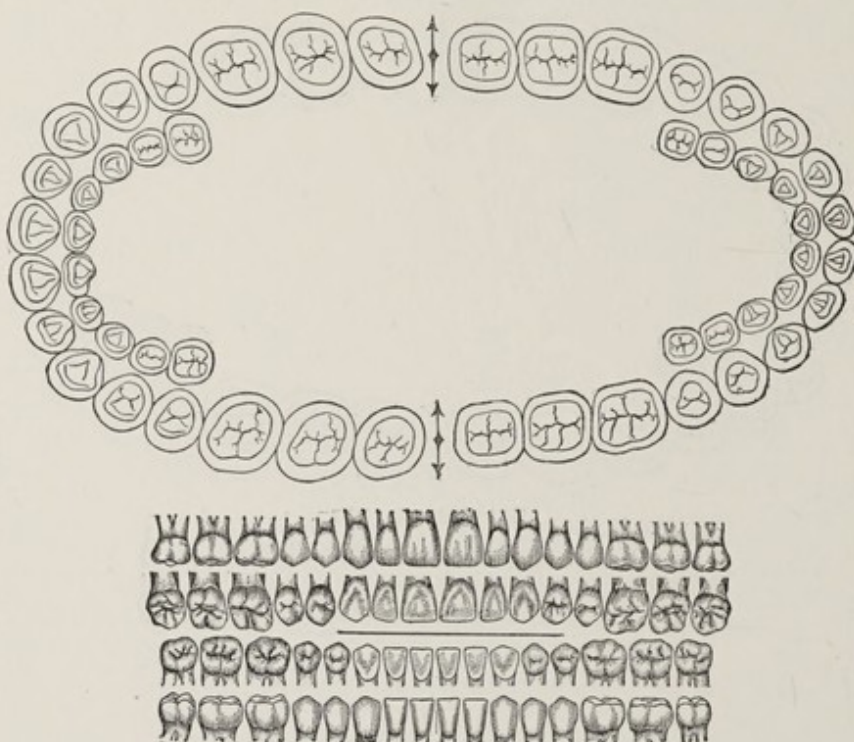




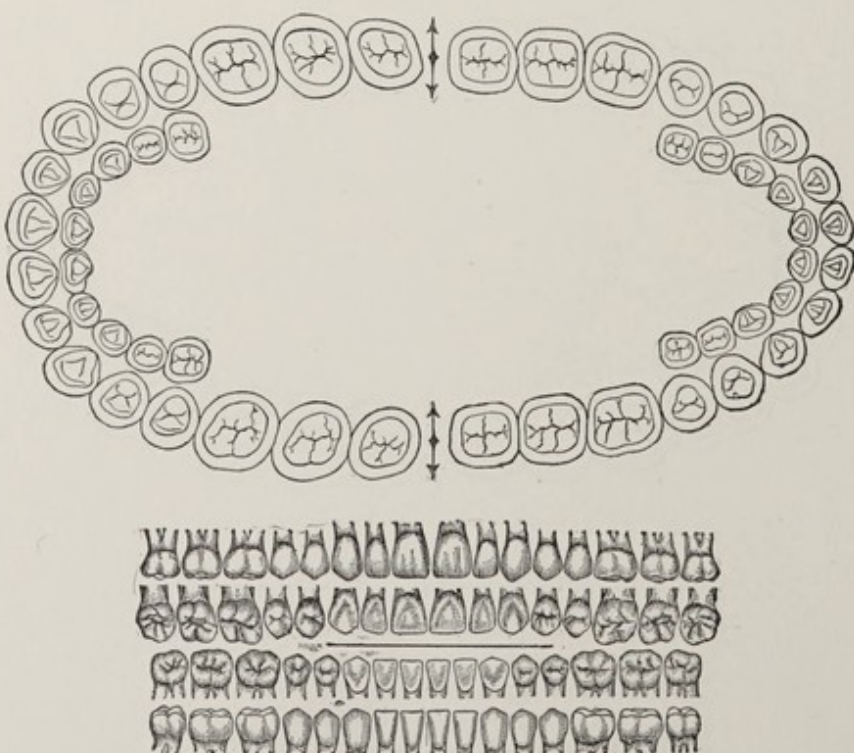
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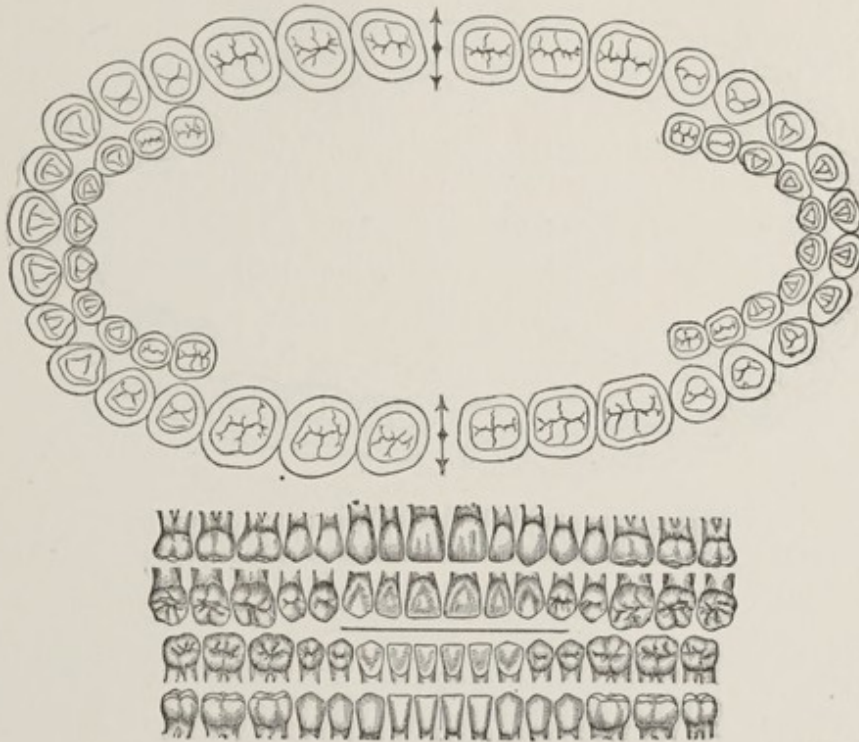
Name: \_\_\_\_\_



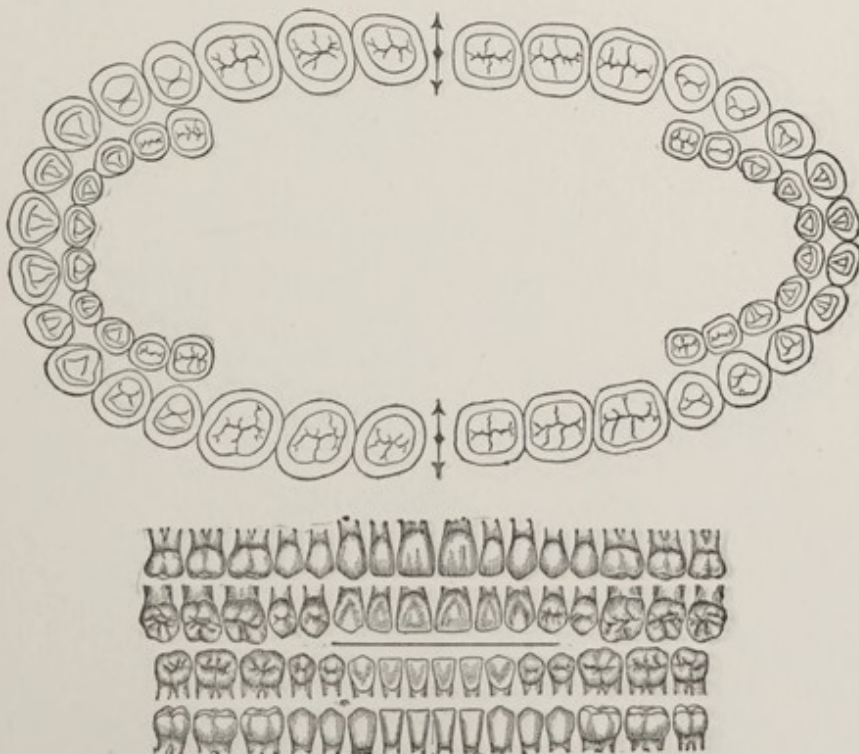
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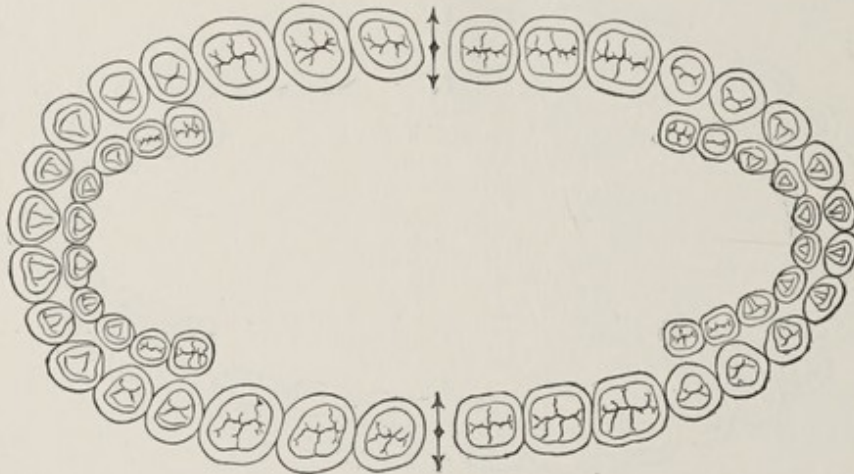




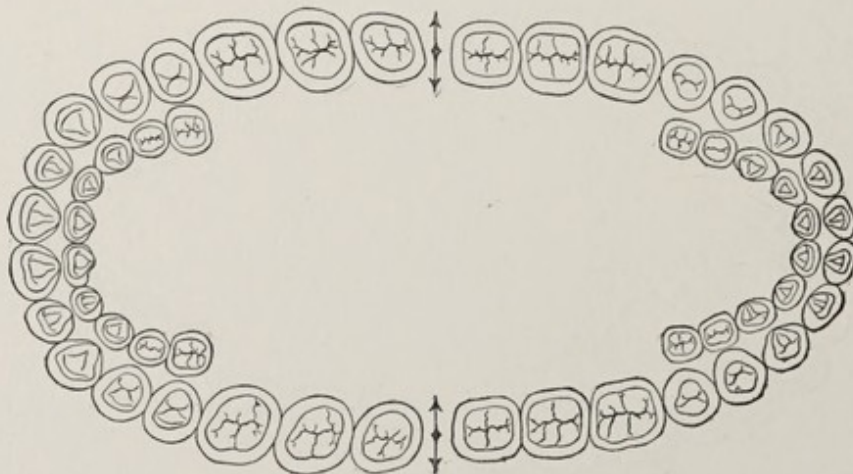
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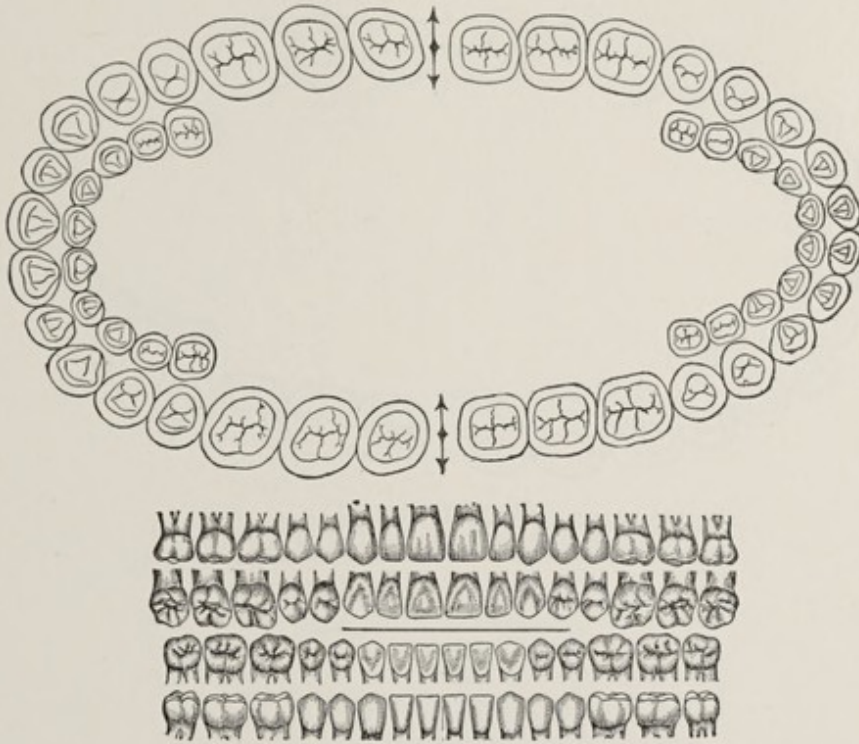




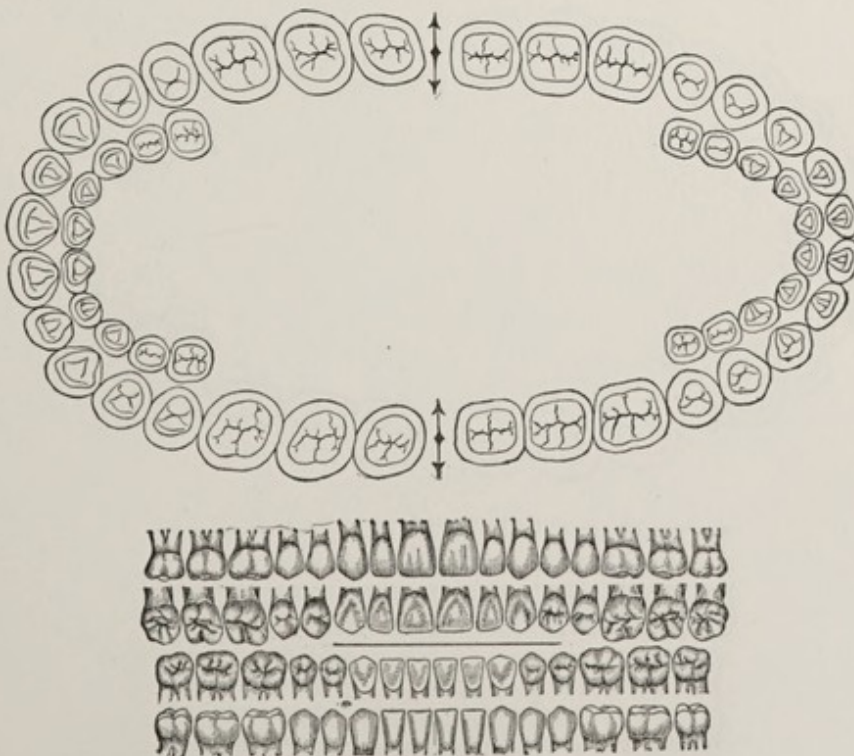
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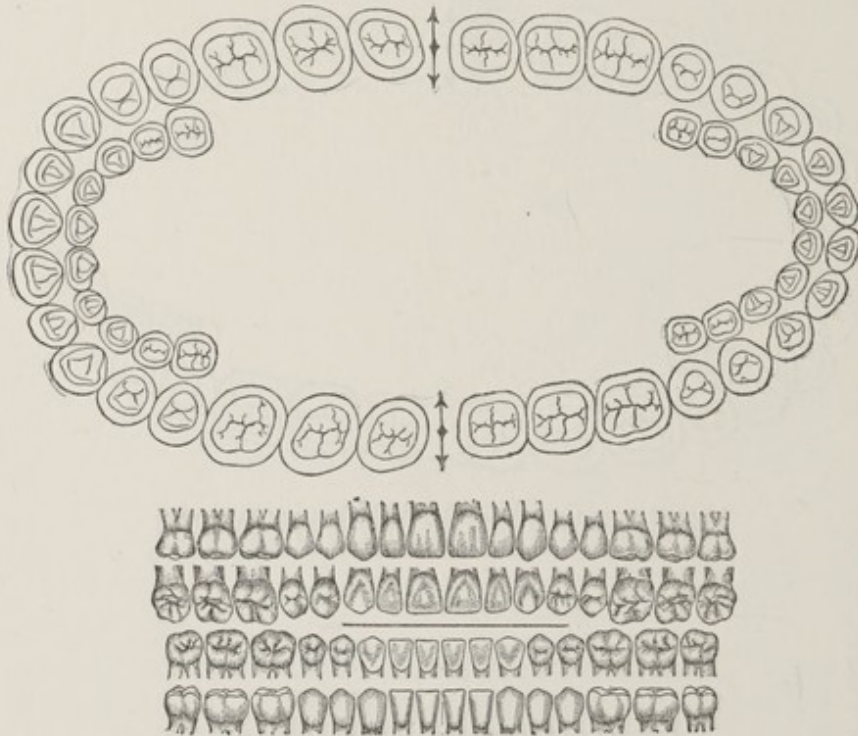
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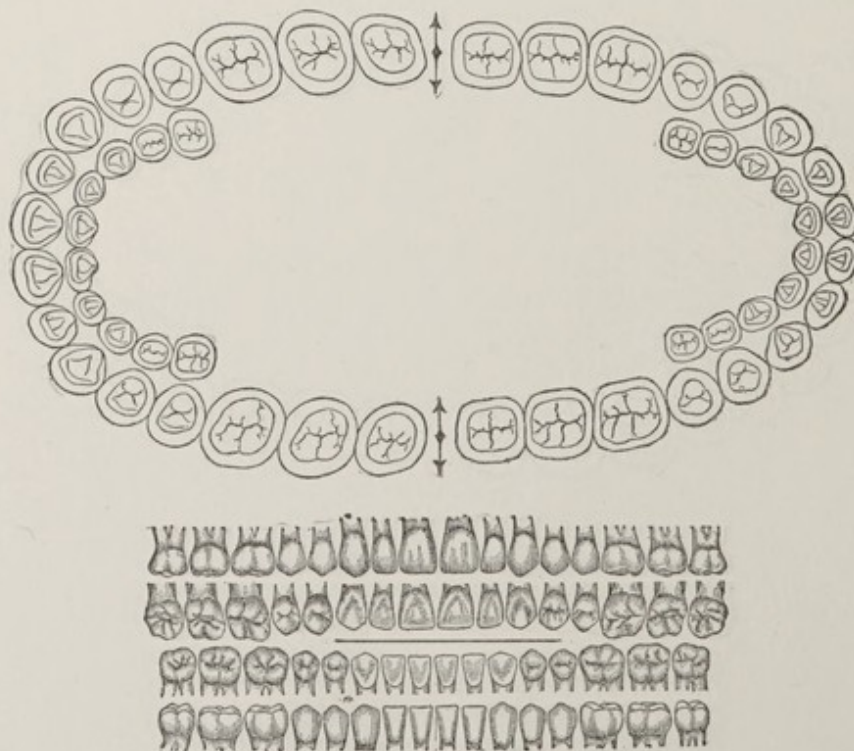
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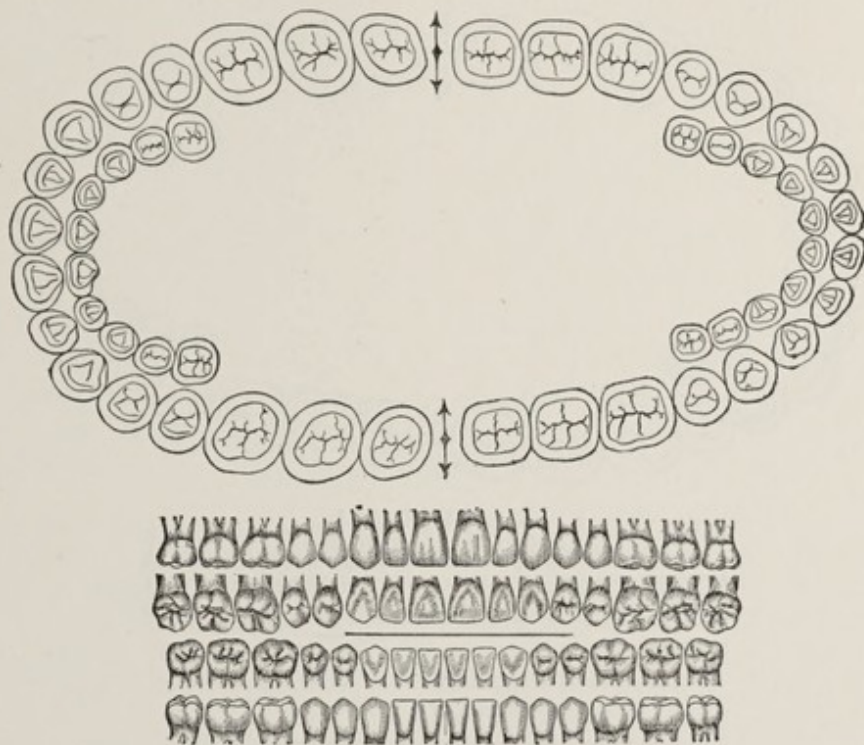




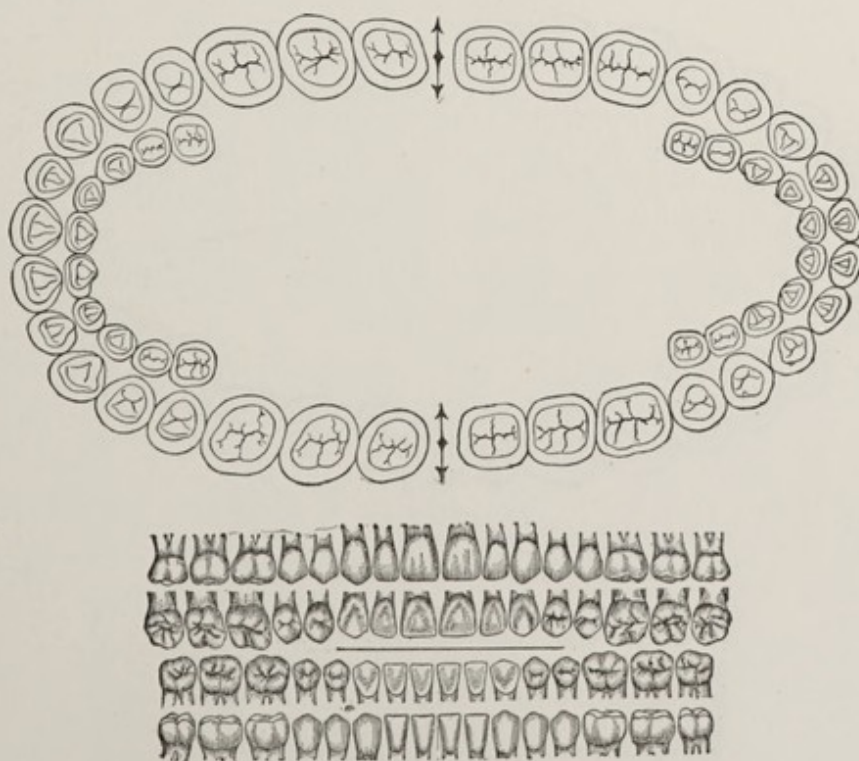
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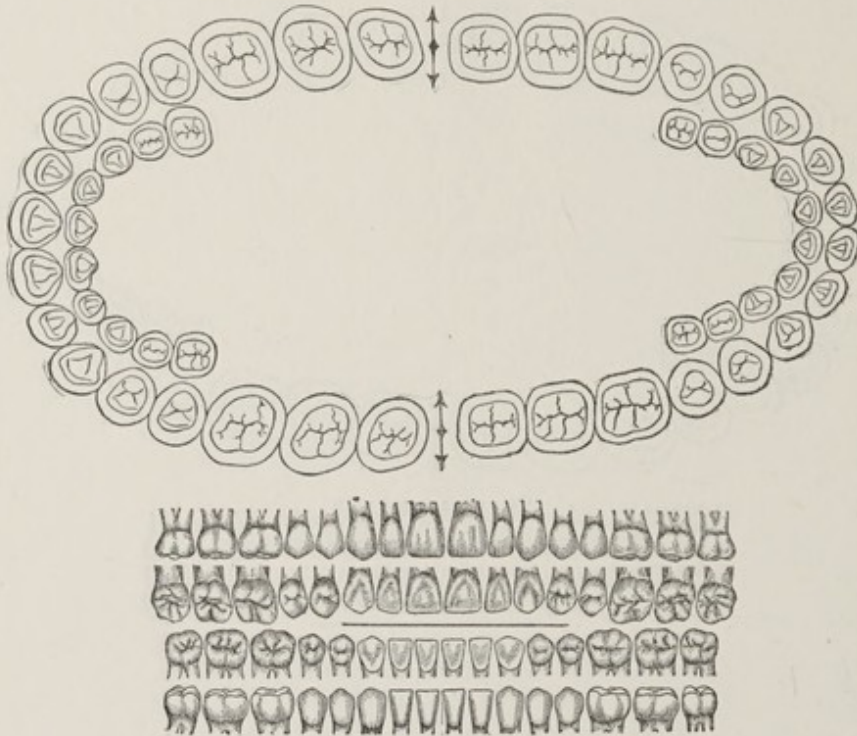




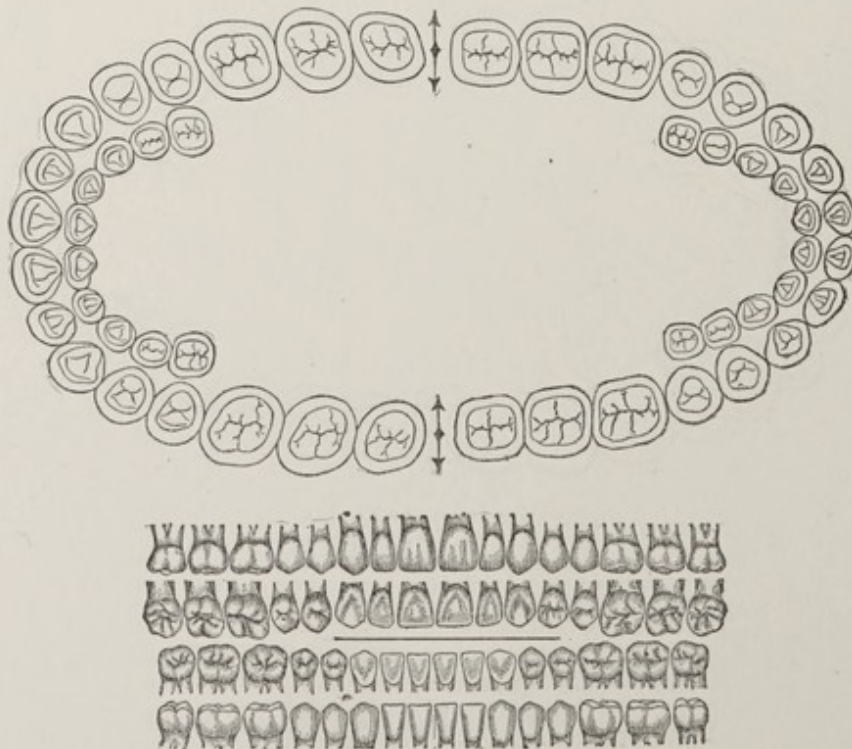
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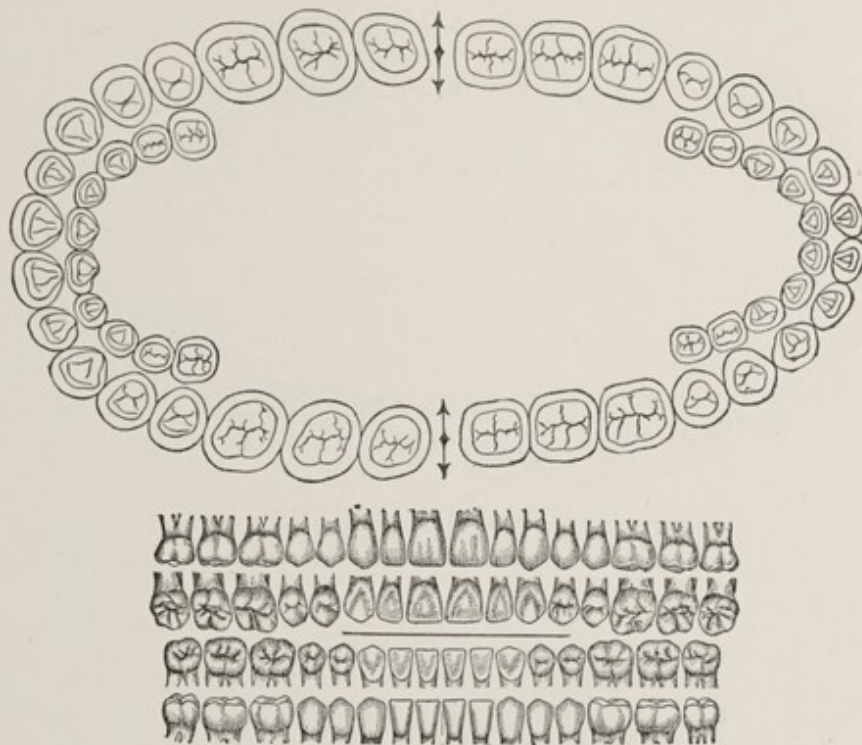
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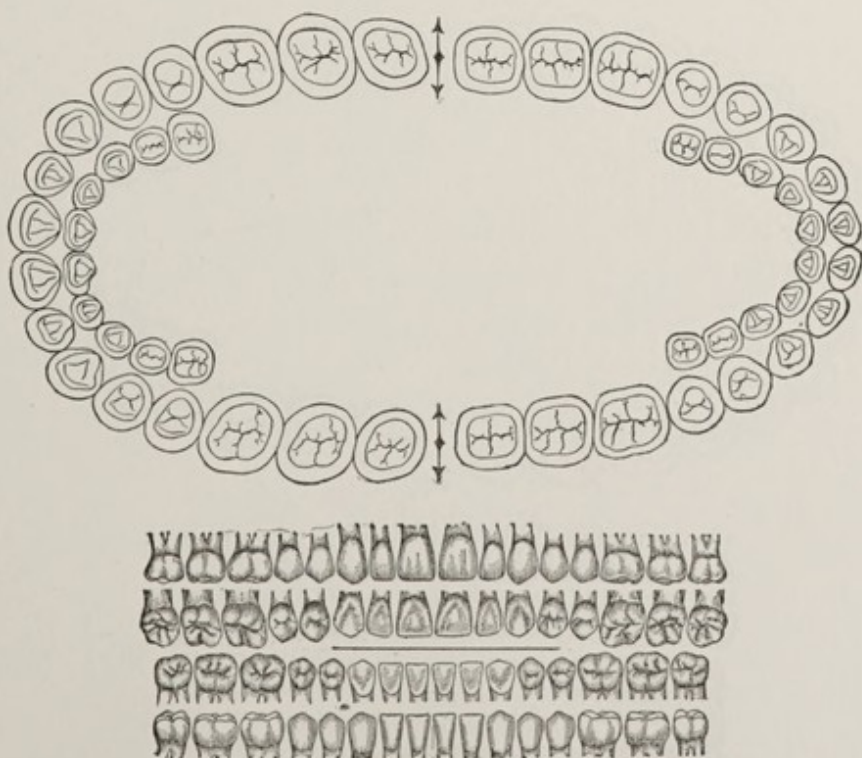
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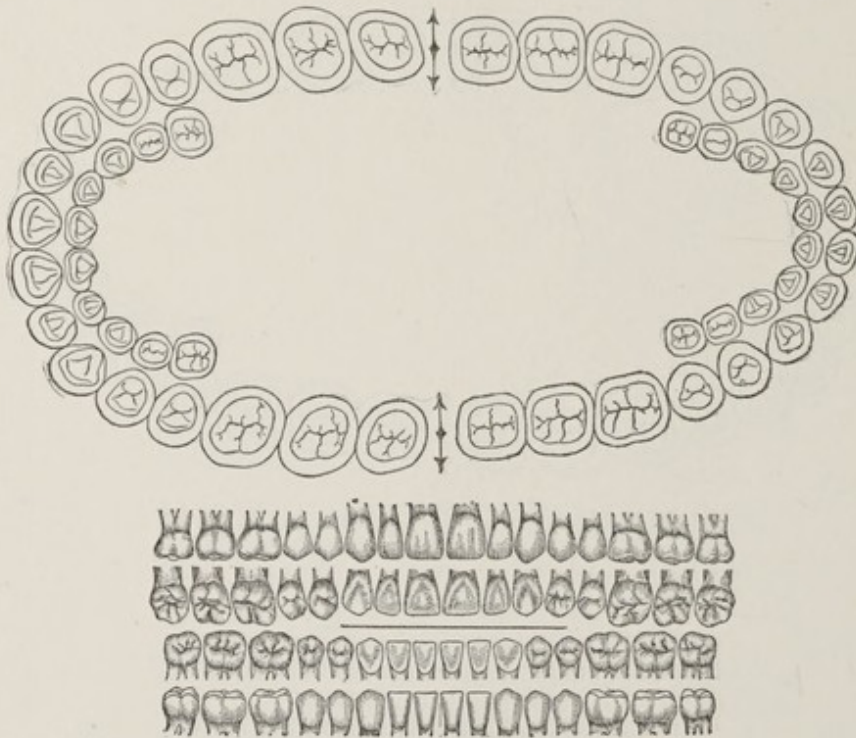




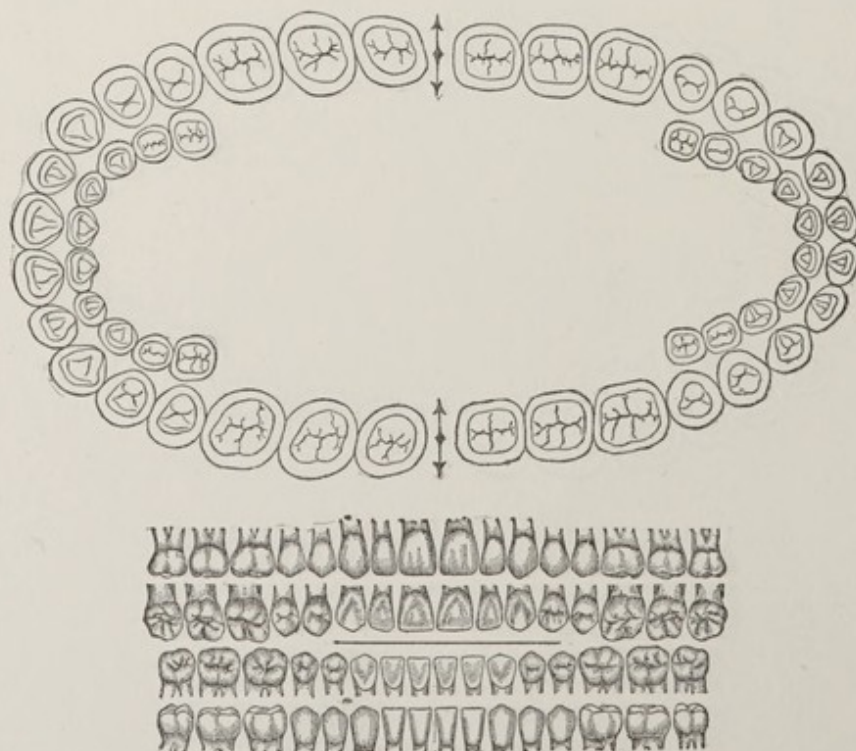
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## PAGE FOR SPECIAL HAPPENINGS

On which to record noteworthy incidents, such as forms and kinds of educational measures, circumstances of early and later environment, tastes, aptitudes, achievements, distinctions, etc.; any facts bearing on the evolution of character and personality (see directions how to use the blanks); also to be used when the special blanks do not afford enough space.

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# Development of Body, Mind, Character and Personality

## THE CHILD AS A PROBLEM TO PARENTS

### General Remarks on Infants and Children In and Out of Health

#### I.

Happiness everyone should desire for themselves and their children; usefulness comes next. Unless right foundations of health of mind and body are laid, the child fails to become a happy or useful citizen. These begin and grow most favorably while the infant is at the mother's breast. An infant fed from its own mother gets not only the largest physical invigoration, defenses against any acute or chronic disease, the strongest self-protective and self-reparative forces, but also a moral power obtainable in no other way. Any artificial food substitute, however perfect chemically, is not comparable in efficacy to the supply obtained through the small maternal sacrifices, or, rather, privileges, of breast-feeding. No infant can become adequately fortified against perils to mind or body who has failed to enjoy the inestimable advantage of maternal feeding. The first few months of life are those in which an individual is made or marred.

However vigorous, well-endowed, or seemingly perfect one may appear who, for reasons good or bad, has been denied the personal care of a mother in earlier months or years, he achieves little more than half of which he is capable.

#### II.

The infant is too often regarded as a small adult, a man or woman in miniature. It is nothing of the sort. The young human being is by long odds more dependent on good care, and for a longer period, than any other animal. Among the reasons for this is one seldom mentioned or realized, viz.: primitive developmental features persist for years, and only merge through the slow processes of organic evolution to perfectness under favorable conditions of environment. This persistence of embryologic characters in infant evolution are only hinted at in literature. As child-study grows, as comparative biologic researches are made, there will not only appear much to interest the parent and the specialist, but we are gradually learning facts from which rules are being deduced whereby conditions of abnormal growth can be controlled—undersize, oversize, varied defects of structural and mental integrity.

#### III.

The problems of childhood are far more complex than those of adults. The key to success in child conservation lies in acquiring an intelligent appreciation of the intricacies of infantile, childish, and adolescent

aspects of growth, development, change, derangement, and their capabilities for repair. Nothing can be worthier the best efforts of parents and physicians than facility in recognizing and correcting childish developmental anomalies and ailments. Errors and omissions in combating primary morbid forces in the young impair constitutional integrity for all time. Any indications of departure from the norm cannot be neglected, condoned or adjusted as can similar abnormalities appearing in the adult.

#### IV.

The child is a vitalized mechanism of indescribable delicacy. If disorders pass unchecked into disease, the damaging effects are both direct on structures and indirect on growth, bearing heavily upon conformation, on susceptibilities, thus distorting organs, checking development in the brain and controlling centers. Attention given to the earliest recognition and correction of childhood's maladies, therefore, cannot be too urgently encouraged.

The cells of the child are in process of almost primitive evolution. Selective affinity is not yet developed; resistance is low; many inherent growth values are unstable. Resistance is so low that even a slight excess, or prolonged continuance of, an irritant, may produce violent perturbations, and readily cause such alterations in cellular integrity as to induce profound and lasting damage. The balance of the circulatory mechanisms (heart, blood-vessels, kidneys) in the young has not yet been developed to a degree which enables them to sustain safely the effects of overmuch interference. The nerves respond so swiftly to irritants that reactive forces (reflex potentials) may readily become overwhelming. Hence profound disturbances often follow relatively slight causes.

The elemental principles by which we can guide growth or function in infants and children should be learned and applied by parents, teachers and others. We can then, at least, determine the form and direction which these deviations from normal functioning will probably take, and outline safe measures by which they can be modified or overcome.

#### V.

The keynote of best results in childhood (pediatric conservation) is the encouragement of development, the maintenance and enhancement of latent growth energies.



The healthy infant is a being whose organic development has proceeded on normal lines, and is, in cellular equipoise, a product of sound heredity, wholesome antenatal conditions, and suitable environment, maintained within reasonable limits. Small variations are, however, permissible. Usually we are compelled to estimate the status of development chiefly upon inferential evidence. We may expect little more to guide us than the testimony of our trained observation, until we shall know more of growth forces, their variants and the significance of persisting antenatal (before birth or embryologic) factors.

To secure a clear comprehension of indications and determinations the avenues of knowledge are hedged about with difficulties, especially because physiology has not yet furnished us with sufficient working data in many important departments.

There are numerous simple as well as complex processes set in motion by abnormal conditions, some of which are, however, advantageous or economic. In the complex reactions to injurious agents, such as cause inflammation and infection, the organism needs conservation of its own protective substances. Protective reactions are displayed beautifully in the establishment of natural or acquired immunity. Among instances of favorable reactions we have physiologic prototypes such as growth and regeneration.

The blood-fluid plays a most important rôle in the defensive cells which eat up bacteria, etc. (phagocytosis), in that it influences invading bacteria so effectively that the phagocytes can more easily digest them. Special adaptations of vital mechanisms occur whereby the balance of nutrition is maintained. Under abnormal conditions there are noticeable differences between normal and abnormal manifestations of function; the self-reparative forces thus may become inefficient, imperfect, diverted from their purpose.

As there are variants in the action of purely regulatory mechanisms, so also are there degrees and individual differences in the powers of adaptation and in protective reactions (phylogenetic; hereditary). These adjust themselves in diseases, and either forbid or permit continuance of function, hence of life. Energy tides rise and fall; are well sustained or fluctuate unduly, due to complex factors inherent and acquired.

## VI.

Infants demand the maximum of quiet, a uniform temperature, the utmost cleanliness of air, simplicity of diet, freedom from irritants of all sorts, moderated daylight, no artificial light, and the least possible sensory, physical and emotional disturbance. Young children are extremely susceptible to reverse conditions, but vary enormously in their adaptability and capacity for enduring irritants. Hence it follows that many times when we cherish the conviction that our health-restoring measures have prevailed, the sick infant has survived in spite of them; or it may be that those factors we could not

control, but deplored, were really less hurtful than we feared.

Exposure to air, especially cold, is viewed with greater liberality now that a more exact knowledge prevails of the value, rather than peril, of the agent. It is definitely determined that continued exposure to heat (*e.g.*, above 80° F.) is of vastly greater power for harm than cold. Excessive and prolonged exposure to light comes next to heat as a depressing (devitalizing) agency. Cold comes last; only in extremes is it hurtful. Vitiating air is bad enough, but dead air, not in motion, is far worse. It is shown by actual experiment that CO<sub>2</sub> in excess in closed rooms can be reduced in hurtfulness by power-fans, or other devices for keeping the air in motion. Cold, *i.e.*, coolness, judiciously regulated, is found essential as a repair agent in many conditions, raises blood-pressure, gives tone to surface circulation, and enhances energy tides.

## VII.

The parent and teacher has conspicuous need of an accurate knowledge of the principles of bodily hygiene to use in the work of each day.

The feeding of infants is admittedly more important than any other agency in development and in repair. Life, growth, and the maintenance of health in infants depend more largely on the integrity of the milk than on any other one agency.

Advances made in the hand-feeding of infants (invaluable as they are) encourage neglect of suckling. Among the well-to-do the omission of breast-feeding is increasing. Some physicians encourage mothers to wean their babies without sound reason, often to curry favor and gratify maternal selfishness. This vice is extending to the working classes. Women find it easy to confide their babies to day nurseries, or professional caretakers, and to supplement their husbands' income by work in shop or factory.

Food (dietetic) regulation is capable of overcoming a large group of derangements which, when they persist, pass into serious disease. Digestive disorders in infancy weaken defensive power (immunity) to transmissible diseases (infections) of the stomach and intestines (gastrointestinal tract), which in turn invite severer infections, even tuberculosis and blood poisons. Nutritive defects form the basis of many diseases of the mind, are indeed oftentimes the sole assignable cause. Cure of those childish nervousnesses so common, but so little appreciated by parents, or some physicians; fidgetiness, night-terrors, insomnia, spasmodic disorders, chorea, tics, convulsions (eclampsia), oversuggestableness (hysteria), neuroses, and psychoses, is accomplished in great part by full attention to corrective dietetics and hygiene. It is well to accept the nutritive fault as the basis of treatment till further light is shed upon the problem. New light of a most valuable character is now afforded by recent advances in the knowledge of the ductless glands. Underaction, exhaustion, is induced by neglect of hygiene,



by minor infections, and can be largely corrected by the use of preparation of the gland at fault.

Careful dietetic treatment of protracted disorders of digestion and their endless consequences cannot be overestimated, though it is often overestimated. However efficacious regulation of environment may prove in many instances, full control over the sufferer cannot always be exercised for the length of time—often months or years—essential to secure full success. Holt says that in chronic digestive disturbances in children beyond the age of infancy, careful dietetic treatment is the only measure which accomplishes anything permanent in prevention as well as cure. An extended period of absolute supervision and control is always demanded.

Where excessive intestinal fermentation occurs, local and general loss of tone follows, a train of distressing phenomena is exhibited in the viscera and the structures which support them. Rhythmic action, a cardinal function of the hollow organs, becomes impaired, loss of forward movements, overdistention (dilatation), inducing displacements, and oftentimes irreparable invalidisms, follow.

A material point in dietetics is to secure full mastication and insalivation; this is too often overlooked. Children, many of them, bolt their food; nurses and parents are often careless or hurried, and regard their duty done in supplying enough, often too rapidly and too much. This fault causes almost as many digestive troubles as unsuitable food.

A practical part of all hygiene or rational regulation is exactitude and minutia in all the acts, duties and pleasures of the day. These directions should be on broad lines, dominantly sketched. For a sick child we must have always plenty of fresh air; cool, but if too cold, it tends to weaken the already impaired resistance in the lungs. As has been said, the opposite extreme, continued heat, progressively lowers vitality. By keeping the air in motion, heat is rendered less damaging.

## IX.

The true purpose of the conservator of health (whether the physician or wise parent) is not only to restore the balance of vigor in the individual, but to go much further, and aim at perfection. His resources are, first and last, dependent upon the intrinsic resources of the organism; his prerogative is not, or should not be, limited to restoration, but includes always systematic efforts at betterment. This can be carried so far that hereditary and inherited faults can often be eliminated

in two or three generations. The self-protective forces, inherent powers for regulation, adjustment and maintenance of vital actions, should be studied from various aspects, and remedies always directed to the repair and enhancement of fundamental mechanisms.

At the head of all forms of conservation stands prevention. By this is not meant board of health measures. It would be absurd to include the negative as a part of a positive proposition, except for the fact that prevention is largely partial and relative; hence it must be reckoned as an integral part of systematic schemes of betterment. *The largest concrete results within the possibilities of medical art lie in the early recognition of abnormal conditions, and modifying these wholly or in part.* We all have a more or less definite notion of the scope of preventive measures and hygiene, especially as applied to tuberculosis, rickets, scurvy, lymphatism, etc. In respect to spinal curvature, for instance, this is a most preventable state, yet little correction is attempted in its incipience. Many derangements and diseases of adults exhibit their beginnings in childhood, i.e., convulsions, whence arise epilepsies, palsies, contractures, and the like. Bronchial attacks and their recurrences, foreshadowing asthma, likewise the milder mental and nervous derangements, lead to endless puzzling disorders. So also of many derangements due to the unstable cellular adjustments of childhood. All this is entirely within the province of the watchful physician. Instances of defeat are due less to his omission of accurate observation and corrective measures than failure to secure the co-operation of the family. To know, one must have opportunity to observe. The duty of parents is to invite the attention of the physician to trivial-seeming disorders. To do this is the clearest economy of money, suffering, and future disabilities.

Our duty is to limit to the uttermost the spread of transmissible diseases. This is possible in proportion as (1) the general practitioner is vigilant and dominant; (2) the co-operation of the family; and (3) the co-operation of the municipality are secured. Medical inspection of schools is accomplishing a silent, but tremendous victory. This care is more needed in view of the disastrous secondary effects of infection, and nothing can condone omission of all reasonable precautions in the isolation of those sick with transmissible disease. These so-called "diseases of childhood" are not inevitable, are always dangerous, leave impairments on the regulative and defensive mechanisms (ductless glands), and form the foundation of future weaknesses, susceptibilities and disturb developments.



# THE BUILDING OF A CITIZEN

## Economics of Development

### I.

Childhood is the time to initiate habits which make for the conservation of energy and behavior. Unless the foundations of constitutional and mental aptitudes are built early, adult perfection cannot be achieved. When this truth becomes accepted and applied, the need for repairing will almost cease. The problem for the teacher can only be solved completely when children come to him equipped by the best nursery training, only when the pupil presents full physical and mental integrity. The duty of achieving this essential prerequisite to good citizenship rests upon the parents. Yet few parents realize their responsibilities or fulfill such reasonable expectations. It may seem utopian to initiate all movements from this normal starting-point, but it is altogether possible. Limitations consist in the wide divergencies of intelligence among parents, teachers and legislators, as well as pupils. This, again, depends upon the persistence of inherited faults in children. These faults, as well as those acquired by bad habits and perverted actions, should finally disappear as advances in education secure definite attention.

### II.

Home-building is the foundation of society. Parents require help, counsel and encouragement in making and maintaining ideal homes. Human impulses unaided are insufficient. Among the best efficient means of home-making is the dissemination of simple rules of right conduct among parents. Generalizations are of small use in primary education. Specific rules and illustrations are vastly better, and adapted to classified needs as to age, sex, occupation. A child learns far more by absorption from elders than from teaching. Example is paramount.

Principles of personal conduct, behavior, can, of course, be learned best in a well-regulated home, where parents and children constitute a mutually helpful society. Home life is, however, unfortunately disappearing in cities, among both rich and poor. The pursuit of wealth is now so fierce that the "hearthstone," real domesticity, is almost a figment, a memory. It is only found in perfection in scattered country-sides, in villages. In crowded centers it is practically gone. The real problems of life depend for their solution upon the cultivation of the home spirit. Education should aim to bring parent and child into an attitude of intimate co-operation, mutual helpfulness.

### III.

Specialization is now so general and begun so early, commercial interests are so dominant, that the individual tends to become a mere automaton, a machine. Parents habitually lose sight of their highest duty, which is the equipment of children to assume and faithfully discharge responsibilities. They should feel and exhibit a personal

interest in the health, pleasures and mental fitness of their offspring. Only thus can they achieve best results by themselves acquiring a clear knowledge on many fundamental subjects, vital to human needs.

Far too much is sacrificed to greed of wage. In cities the home is becoming a mere abiding place, whence all fare forth to earn. Unnumbered infants are brought into the world in an atmosphere of hurry and confusion. These demoralizing conditions are unimagined by the relatively poorer pioneer or farm laborer, who is rich in material blessings, light, air, suitable food, peace and restfulness; and, above all, in leisure to think and form sane habits.

### IV.

The most important department of conservation is that of the *human unit*—the citizen, the member of the Commonwealth. All other problems of conservation are secondary. The wealth of a community, the power for good, depend on the right development of the child. Hence conservation of the potentialities of the child demands the highest degree of scientific attention.

This subject involves problems of primary education, initial direction of primitive impulses, mental, moral and physical, of adaptation and specialization. The character of society depends on its schooling, training of the nature, the desires, beliefs, behavior of the individual in early life, in the nursery and in the home.

Conservation is both of the fit and the unfit, the normal and the subnormal. The first object of eugenics is to check the birth rate of the unfit. For the low-grade degenerate and the criminal there is only one solution, asexualization. Society will adopt this so soon as stern facts are realized.

Relatively few, if any, are perfectly normal. From prenatal states morbid agencies are constantly arising, many of which are preventable; most are remediable if corrective measures are adopted in time. The human young being, the highest in the evolutionary series, needs a longer time to complete development. The higher nervous structures—those which appeared latest in the evolutionary process—are the last to become functionally perfect. The long period of immaturity of the human young makes for hypersensitiveness to environment. Hence, conditions of environment exert profound effects for good or evil. Not so of the horse, the cow or the deer, which is born ready to discharge its balanced energies in any immediate direction.

The real problem of child training is (1) to determine the best methods for conserving the powers of the average child; and (2) to solve all problems of the larger number of those (relatively) deficient in special directions. Many inherited bodily and mental faults are readily corrected, thereby rendering the individuals normal. Errors can and should be corrected in eyes, nose,



throat, ears, and the noble organs, especially heart, circulation, and digestive organs; also in hands, legs, feet, back, chest, teeth, and the like. Above all, mental characteristics demand analysis and wise groupings and classification, according to capacity, impetus, and tastes.

By the normal use of parts alone, *i.e.*, exercise, are best resources evolved, brought to full fruition.

"Function makes for structure," as action makes for thought, not *vice versa*. As Emerson says, "Our thoughts spring from our actions, not our actions from our thoughts."

#### V.

Having determined whether any limiting conditions are present, and after removing or correcting them, we can proceed to encourage, guide, and train action, function, thought, feeling, impulse, observation, reflection, imitation, choice. Thus is formed the foundations of behavior and career.

Next, determine how the one, or the family, can be guided from economic standpoints. To get highest results, determine how latent, often unexpected powers can be amplified, brought to highest efficiency. The domestic group, the family unit should be studied in the same way. Many difficulties arise here, the chief of which is the costliness of such intelligent, time-consuming special teachings.

Then, if there be no limitations apparent, physical or mental, be on the watch for such as may appear in the course of educational evolution. Bodily or mental faults demand prompt recognition and expert attention. Environment is a powerful factor, which always can be modified, improved and made to accomplish unexpected results.

Organic adaptative development is perfecting the body consonant with its inherent resources, potentialities, thereby rendering the individual efficient as a citizen, a wage-earner, a leader; bringing each one up to his or her norm by enhancing all latent capabilities.

Education should begin with the special senses, hearing, vision, observation, reflection, storing up impressions for future use. A most important ally of vision is touch, tactile and muscular (kinesthetic) sense.

Taste and smell also aid in forming paths of habit-formation.

Automatisms are for safety; arise in motor instincts from far back in heredity, due to phylogeny (race evolution) more than to ontogeny (personal evolution) by (1) habit, the repetition of what is worth repeating; (2) accommodation, adjustment to new conditions; this involves selection, by conscious, or unconscious imitation.

"Cultivate variability, which is the most precious part of a good education." (Boris Sidis.)

These problems are plain enough, however complex they seem. Mental and moral characteristics demand greater study, keener differentiation, deeper insight, more elaborate preparation in the teacher.

Heredity is a powerful factor, but chiefly interesting to the physician, the euthenist, the eugenicist. Individuals

have enough to do in choosing a suitable career and a helpmate, and in conforming to judicious rules of life and behavior.

Selection of mates should be made, not alone (as is customary) by propinquity, accident, nearness (as of the two Leyden jars), or from overrefined notions of duty, sentiment, or for personal aggrandizement. Mating should be assisted and guided by properly appointed, responsible persons. Significance of right mating should be inculcated by forming public opinion; and should, at least, be outlined, and often presented by teachers. Sex education is vastly more important than industrial or cultural education. On a knowledge of sex impulse and evolution may depend all future happiness. Self-control may self be learned, and should also be taught.

We can get aid in the principles of eugenics from physicians, biologists, specialists, or from books.

Since no laws exist to compel right matings, and but few and wholly inadequate precedents or guides to aid in choice or compel selection, we must now depend on such counsel as is available.

Breeding of degenerates is utterly wrong, indefensible. Some progress has now been made in learning to avoid the wrong thing; very little in doing the right thing.

Asexualization of the wholly unfit is a simple yet radical precaution, which will be adopted as soon as public opinion progresses sufficiently. There is no other course suitable for limiting the degenerate and insane.

The breeding of weaklings is deplorable, is grossly wasteful. It is on the increase, and statisticians declare (Hyslop) in the near future they will be as one to one. Fortunately, nature is making a constant and more or less successful struggle to attain and regain lost perfections. She needs every bit of help obtainable.

Nearly enough can be accomplished in everyday life by making reasonable efforts to attain personal perfection. Ample inherent forces exist in every intelligent person to do far more than might be expected, in spite of serious gross limitations.

The science of human conservation is making great strides in overcoming losses of vigor, in correcting defects, partly by improved conditions of living and partly by artificial aids, *e.g.*, removal of adenoids, use of glasses, mending of teeth, and removing impacted teeth, abscesses at base of teeth; and other sources of non-sensory irritation; relieving and curing displacements of the organs, and other forms of anatomical defects.

#### VI.

There is a growing need for making popular a science of right living (euthenics). This should begin in the nursery stage and be carried through to the end of special courses; also in all academies and colleges. No other subject can compare with this in importance. The child should be taught that the aim of all human culture is to fit the individual to be useful to others; that the foundation for this culture is the development of two chief human faculties: (1) goodness, which impels us to



wish our neighbor well; and (2) intelligence, which teaches *how* to be useful to our neighbors.

The central idea throughout the entire education of the child and youth should be that his studies have for their purpose the perfecting and augmenting of his usefulness to the world at large. To accomplish this aim we should cultivate the young human being with a care at least equal to that with which we cultivate flowers or fruits or domestic animals, so that we may get the best fruits and flowers for them. It must be admitted that, at present, human development does not proceed on exact, rational, economic lines.

Development cannot proceed by opportunity alone, but through and by expert guidance. Special education is needed here as nowhere else. Also, not only for the young who have not come to the full measure of their spontaneous growth, but equally for the middle-aged and older, whose faculties, functions, powers show retarded development. Methods now employed are much the same for young and old, for weaklings and the vigorous. The whole herd is driven one way. All the more reason that way should be the best one. Variations should be made to meet all special needs.

The best form of primary education is play. The play impulse is a primitive mimicry of the chase, war, household industries, field labor, and the like. Not only is the individual by the play trained, but organization is developed, the clan, the national spirit, patriotism.

There should always be alternation of free play and of education or useful work. Best results come from alternating—for a child, a whole day. Children on half-time in school schedules or terms progress as rapidly as, often more rapidly than, the whole-time children (Professor J. M. Tyler). These children, out of school, should have access to ample playgrounds, and some skilled supervisor should utilize the play impulse, which is corollary to the study impulse. The best results come from wisely utilizing and directing the play impulse to learn useful things, the chief of which is service and responsibilities.

The teacher should always keep to the front the idea of attaining useful ends, for self, and for others. School gardens afford a comprehensive field of education.

## VII.

The most exhausting agency is prolonged fixed attention; the next is prodigality of effort, diffusiveness in excess of concentration of effort. This is seen in the prepotencies of childhood carried into adult life—overplus of talk, of shouting, of motion, jumping, tapping, whistling, etc.; exaggeration of conscience, morbid impulses to overdo. Not only is this wastefulness harmful to the child, upsetting continuity of development, of progress in body-growth, of character-building, mind expansion, but such persons become nuisances, pestiferous, fidgeting folk, a strain on themselves and others. They readily acquire obsessions, perversions of the mind or soul (psyche), dissociated personalities; they tend to

become kaleidoscopic fools, often worse. Things are left at loose ends, or wrong ends. Most of this is the outcome of undirected youthful prepotencies.

The cure is by inculcating tactfully system, orderliness, rest, change of environment, often of enforced change of habits, from overstimulating circumstances to relative monotony. The worst cases require isolation to induce mental abstraction, till the seeds of moral growth, of self-control, are implanted. The most exhausting agency, especially for the young, is overprolonged fixed attention. No child should be expected to sit still and be good.

No culture progresses sanely except by judicious dawdling, deliberation in thought, in reading, in thinking, reflecting. No man has become a great leader of men who has not enjoyed opportunities for long periods of loneliness, slow perfecting of spontaneous impulses, emotions; hence judgment evolves.

## VIII.

To attain serene old age is possible to most persons if only they co-operate with nature and follow sane, instinctive promptings to do, or cease doing. It is essential to watch one's self carefully, but calmly, with no abnormal solicitude; freed from the domination of artificial habits, external suggestions, morbid stimuli. Be on guard constantly against the eager advice of irresponsible meddlers, loquacious ignoramuses, chance friends, who have "had experiences," but do little or no thinking.

The human body is supplied with superabundant inherent powers, vastly more than enough for all ordinary and most extraordinary needs. The organs of the body are provided with excess tissue structure and energies, constituting large margins of safety, reserves beyond the maximum needs of ordinary activities.

The same principle, from another standpoint, is by William James's "Energies of Men." While we all run much risk, at times must take large chances, it behooves us to practise habitually so much of economy as will enable us to store up, or save, energies against sudden, extraordinary, depleting demands, and conversely to sedulously avoid drawing against our credit account to the verge of bankruptcy.

This principle has been elaborated by Boris Sidis. He was among the first to emphasize the overplus of inherent unused powers. He has made scientific and practical demonstration of the reserve forces of the human mind, has educated his son and others, several boys and a grown man, in such fashion as to demonstrate the limitless power of rightly directed primary education, by encouraging impulse and aiding by suggestion. He teaches how to unlock the hitherto inaccessible stores of subconscious reserve energy, by cultivating the power of habit-disintegration, opening the eyes to see and know the evils and follies of life, and how to avoid them. He likewise utilizes this in treating disorders of the mind and psychopathies, psychoneuroses, by inducing hypnoidal states, and then reassociating the disintegrated elements of personality.



It is entirely feasible to educate the young, gradually and naturally, in the ordinary channels of instruction, to value bodily health; to realize and use conditions for mental and other elements of efficiency; to adopt instinctively conservative measures of conduct which will not interrupt the ordinary course of life or channels of industry.

We would not say that all established educational methods are faulty or inadequate, but they can be vastly bettered. Those in vogue lack effectiveness, if not for the lowest averages, for which they are perhaps fairly well adapted, certainly those of larger inherent capabilities do not get a fair chance to develop by pursuing customary routine methods.

#### IX.

*The educator of the young is the most important member of the Commonwealth.* He should be paid enough to command the highest abilities. Thoroughly educated and qualified teachers should be numerous enough to give adequate time to secure the highest results. They should, above all, be supplied with leisure to study and elaborate methods suited to individual development. High honor should be theirs for brilliant, original and wise work, for especially difficult problems and developing backward individuals.

Children leave school for reasons which can be studied and determined. The Russell Sage Foundation commissioned Dr. Luther H. Gulick to collect the facts in New York. Among them are:—

Two hundred and fifty thousand boys and girls leave school each year at fourteen and a half years. Sixteen per cent. for ill-health, half of which is remediable. Some are merely discouraged. Too many duties are crowded into the eight years of school life. Much of what is taught is beyond the mental grasp of the individual, or of those of that age. Here is the time and place for laying the foundations of future efficiency.

The nervous phenomena of puberty, the tremendous changes occurring at that time, induce irritabilities, restlessness or apathy, all affecting right decisions; and when in doubt the tendency is to quit. If this critical period can be tided over by rest or easier work, or by skilled advice and guidance, the individual will be saved mistakes, loss of mental development, a marring of the career.

It is necessary to determine the proper age for beginning school. The object of school is not merely to get knowledge, but also to learn how to learn, how to think, how to conform to organization, and how to play so as to develop all around. The child should begin as early as possible to learn something. Children can learn more economically *in groups*; many things are learned by associations that are not acquirable through teaching.

Knowledge is *not* the same as intelligence. Knowledge is easily acquired by many, but intelligence is a quality of the few. Powers may be latent; some may

not "get into their stride" till later on in life. Hence, the apprenticeship system has value. This is less used now, but is again becoming a part of large industrial plants to develop special artisans from young children.

#### X.

The best form of training for all is sensorimotor education along the lines of eye and hand co-ordinations in art forms. The body, as a whole, should be intelligently trained, and each of its parts exercised in accordance with its natural function.

The upper extremity is obviously adapted for the handling of objects with nicety and precision. The great range of mobility is in the shoulder-joint, next of the forearm compared with the leg, allow for not only flexion and extension, but pronation and supination. The delicacy of structure in the hand, independence of the phalanges, the more differentiated nerve-supply to muscular tissues, all point to possibilities of higher specialization (Luther H. Gulick).

The largest possibilities for getting results in future school work are along the lines of what is called "manual training." This should be of a sort to equip not only the hands to do, but the eye to see, the brain to guide to increasing specialization, *e.g.*, in art work. (One of the most effective and earliest methods is that of J. Liberty Tadd, of Philadelphia—"observing nature forms," then free-hand drawing on blackboard, modelling, carving, and finally, designing.)

Mere tools, benches, primitive materials, sloyd, etc., are not nearly so valuable; they narrowly restrict both action and reflection, and induce little or no initiative or ambition. The Montessori system is too trivial, somber, lacks opportunity for initiative, for expansion, variety.

Household work is a good and useful form of exercise, but alone fails to secure fullest range and accuracy of direction, as do active games of boys—imitations of the chase, war, etc. Always expert guidance will quadruple effectiveness; note what skilled trainers accomplish in systematic athletics.

Greek games are capable of being adapted to modern methods, and are effective, involving as they do dances and graceful posturing; field and track sports and games, posing as classical statues; swimming competitions are of value in acquiring precision, so especially of music, the violin, the piano.

Systematic guidance is needed in attaining correct posture, both in repose and in full action.

Socialism tends to demand that society shall assume responsibility for the individual, in schools, in medicine, etc. This is not nearly so promising as to demand that, for all, the form, kind and degree of education shall be such as to bring out the best possible in each one; to classify the kinds and degrees of capacity, and to aid the individual to work in his or her grade, to advance within lines of inherent possibilities.



## HOW FAR CAN IMPROVED CONDITIONS OF LIFE OVERCOME INHERITED TENDENCIES?

### Euthenics, The Science of Increasing Efficiency in the Individual by Improving Environment

#### I.

However much a child may be handicapped by evil ancestral traits, tendencies, weaknesses, in mind, morals or body, these adverse forces can be limited, in large measure, by supplying favorable conditions and right guidance. We are not yet in a position to determine the force and extent of euthenics, because we do not yet possess many needful facts, or laws, both from heredity and experience. Parents and guardians of children are chiefly interested in the problems of heredity to know what they may expect from good care and the application of conservative measures. In each instance we must learn as much as possible of the ancestral history, judge the facts unflinchingly, be ever on guard against dominant morbid tendencies, and be eternally vigilant, or they will become established beyond repair. How far a pronouncedly unfavorable heredity can be influenced we do not yet know.

This much is common knowledge: Favorable environment is efficient in proportion as it is exerted early enough, persistently and consistently enough. Desirable results follow favorable influences in proportion as the factors to be reckoned with are known and understood; also as good conditions can be secured of a kind and in a degree capable of amplifying latent energies; also as judgment is used in the selection and application of remedial measures.

The life history and career of the average individual is determined by three main factors: heredity, environment, and will. The laws of heredity are still far from clear; becoming gradually known, though only slowly is their significance and bearing on daily problems being understood. It amplifies deductions to assume the existence of determinants in the cells (chromosomes), whereby the responsibility of direction can be laid to this agency, but the problems are not yet solved. There are present in each individual certain ingredients, tendencies to weakness or vigor, forces which make for good or evil. These may skip one or more generations and appear suddenly in a later one.

Some of the characteristics which tend to recur in the same or analogous forms cannot be prevented by any known means except by selection of father or mother free from the vitiated strain. Since there are no official guides for mating in human beings, they must use their own best intelligence; must depend for counsel on experts in eugenics, and abide by their decisions, otherwise sorrows and disappointments will be multiplied. As knowledge of the principles of parenthood and race culture grows, the power of instinctive choice will become established.

"The struggle is now in the realm of the mind. It is a mental combat. Therefore strengthen heredity by mating fit with fit. Bettered environment and improved education do not create new germinal types. . . . Immunity of offspring is produced only by immunity in the mother. . . . The heredity of immunity and of susceptibility is one of the most important fields of eugenics."<sup>1</sup>

One thing is sure: Best inborn potentialities cannot come to perfection except under favorable conditions of environment and training. Given two streams of tendencies, after the bad has been separated from the good, it is essential to enforce adequate measures to prevent their mingling again. "Verily, what ye sow, that shall ye reap." The only method in sight to secure purification of the race is for children to be taught broad principles of biology, whereby they will appreciate the importance of eugenics, parenthood and improved race culture in human beings. Well-instructed children, upon becoming parents, are equipped with an instinctive consciousness for choice of mates, enabling them to exercise wise determinations and choice. As to the belief, fostered by certain forms of religious teaching, that there are virile human beings that will assert themselves and reach perfection in any environment, these rare individuals will be found, on scrutiny, to be always of exceptional stock.

The test of any plant, or animal, or man, is how it is capable of reacting to its environment. Man is, however, much more than plant or animal, and molds and shapes his environment to meet his needs, desires, and ambitions.

When we are able to distinguish the factors of a good inheritance from those of an evil one, how shall we then proceed to eliminate the one and perpetuate the other? Again the answer is: By education in fundamental genetic principles and by molding public opinion. We can only slowly evolve and apply extraordinary measures which may seem to strike at the fundamental interrelationships of society, as in dealing radically with the unfit. We cannot do as did the Spartans and abandon weaklings and degenerate infants to die.

There are those who claim that natural forces and natural selection, the part which nature plays in everyday life, need not be influenced by intelligent guidance. In practice this is a perilous optimism. At best, these natural agencies, unguided, can only work slowly, uncertainly, and with many defeats. Why, then, wait to apply this guidance and direction to human beings, when

<sup>1</sup> Meyer Solomon, *International Clinics*, July, 1912.



already all governments supply selective action to plants and animals?

Biologists generally teach that "environment can exert no hereditary effect on organization," i.e., on acquired characteristics; hence acquired characteristics are not inherited or transferred. This is by no means universally accepted.

## II.

Euthenics is the betterment of living conditions through conscious endeavor for the purpose of securing efficient human beings. It deals with race improvement through environment, while eugenics deals with race improvement through heredity.

We can, at least, effect much good by rigid control of the transmissible diseases and poisons like lead, mercury, alcohol, which make for degeneration by affecting propagation of stock. The problem of determining who is fit to marry and who is not; the issuing of marriage certificates after conclusions are reached by judicial decisions, is at present difficult, especially since lawyers have trouble enough in determining who is, and who is not, insane. A public bureau that will be entirely matter-of-fact and conduct rigid examinations is entirely possible. A laboratory can and should be established, where all necessary tests can be made for a moderate fee—and will be established when women become alive to their rights. First among these rights is to get a husband who shall be a proper father to their children.

Both boys and girls must have early education in sex hygiene. Sex knowledge is of vastly more importance than food knowledge, or clothing knowledge, or any or all the factors of industrial or cultural education.

The girl untrained in sex knowledge is in constant peril of worse than her life. Above all, the follies which still obtain from the ages of darkness is the pitiable falsehood that any girl can, by marrying, ever "reform" a man.

The whole subject is at present far from solution. Time will offer much enlightenment. Every young child must be taught the principles of biology, and thus learn to think in terms of growth, development, reproduction.

As illustrating what has been attempted by enthusiastic euthenists to regenerate hypoplastic stock, Professor Leon J. Cole<sup>2</sup> quotes two experiments: One the "Zero" family, of Switzerland. This family came from two vicious individuals, and in 1905 there were 190 living. The young ones were placed in good families and kept under favorable circumstances. After a time they all wandered away and went to the bad.

Also Mudge, in Scotland, took pauper children from Glasgow and placed them with respectable families on the West Coast. For the most part they all reverted to their inborn tendencies—"new slum areas were created."

## III.

Euthenics is by no means a simple problem. It is difficult to differentiate those characteristics resulting from inborn determinants (inherited) from those in-

duced by environment (acquired). Probably both influences act together in the manifestation of some characteristics, such as conformation, proportion, size, height, etc., due to food, climate, exercise, training.

Environment can become efficient only when the necessary hereditary basis is present. A permanently favorable environment is more promising. Inherent qualities are what determine the status of many things; no amount of polishing or cultivation can overcome original and radical defects. Let optimists disprove that if they can. Optimists, people who are swayed in their judgments by obstinate fixed ideas, formed by wish and not by knowledge of facts, are among the most dangerous of beings. "Environmental factors are not only of importance in bringing about arrests of development, but also heredity, through defects in the germ plasm, plays a much smaller rôle than is currently believed" (Charles P. Noble).

Not all conditions, which supposedly make for degeneracy, are efficient causes. Nor are so-called favorable causes necessarily beneficent. Too much ease, comfort, material welfare, may, and apparently often do, induce conditions classified as degenerations. Moreover, many of these hypoplasias (evidences of abnormality, developmental arrests) cannot be attributed to definite causes (e.g., parental epilepsy, idiocy). A society recently organized in Germany, for the study of genealogy, heredity and regeneration, has announced that overmuch prosperity, mere improvement in material welfare, is alone sufficient to cause degeneracy. Hence, it is at least possible that certain factors commonly regarded as causes of degeneracy are really its effects.

Degeneracy must be understood in full to show its relationship with epilepsy. Its common manifestations are expressed in low vitality (as seen in still-births, congenital debility, inability of the mother to nurse, high infant mortality, falling birth rate, tuberculosis in early life), psychopathy, defective development in all phases, general inferiority, abnormal sexuality, criminal and other anti-social tendencies, pauperism, weak-mindedness, etc. The unrestrained production of wealth is by no means an unmixed blessing. A divergence of classes has resulted wholly out of harmony with the trend of wholesome social evolution. Nations fluctuate in progression or retrogression.

However, through careful selection, by breeding from only the best available individuals, much can be done gradually to overcome hereditary influences.

## IV.

The above statements need not cause discouragement; they should rather stimulate each one to study the subject of genetics. Not one family is safe from disasters due to hereditary defects, as well as to ignorance, blunders or arrogant optimism. The future is dark unless we can know the place each one occupies and the part each one plays in racial evolution, and this can be learned only through familiarity with trends of current knowledge in genetics. Light may come suddenly to the

<sup>2</sup> *Popular Science Monthly*, Nov., 1912.



humblest observer; so, it behooves each one to do his or her part.

At present there is a deplorable condition of indifference and ignorance as to the possibilities of race betterment. All sorts and degrees of degeneracy—devolution, or hypoplasia—exist; pathetic burdens occur in the families of even the worthiest, most estimable people. The most hopeless individuals are usually isolated; the less-marked too often remain at home to break the hearts of parents and relatives. A large number are not recognized till abnormal or evil tendencies have developed into physical decrepitude, mental alienation, criminality, or, at the least, incompetence and heavy burdensomeness.

Most fortunate is the parent who is perpetually vigilant and wisely brings to the attention of a competent physician the earliest indications of developmental arrest or defect in a child, and who is also frankly willing to be guided in adopting necessary precautions and remedial measures. The questions thus opened up must be faced by everyone whenever they arise or suspicions occur.

#### V.

Concrete problems commonly presenting are those bearing on physical or mental integrity. The wisdom and tact of the adviser consulted are then sorely taxed. The difficulties are not so much the immediate as the future ones. Where an ignorant or self-sufficient parent has overlooked evidences of retardation or damage, the child may be, and often is, sent to school. Medical inspection is now established in most communities; also teachers are taught to note and report shortcomings, deteriorations, inadequacies. Thus few and fewer personal limitations will escape detection.

When mental peculiarities, deficiencies or aberrancies are due to physical causes, neglected derangements or defects in structures, in organs of special sense (eye, throat, nose, and the like), it is a simple matter to refer the case to an expert and adopt corrective measures; where there is damage to the noble organs (heart, lungs, kidneys, and the like) betterments are obtainable by regulation of life and conduct. Surgery has opened wide the long-closed door to the repair of a host of disorders hitherto regarded as purely medical—deep-seated disorders, as of colonic putrefaction, acute angulation and flexion of the sigmoid in epileptics, causing mechanical obstruction (Axtell). Powerful poisons may occur, like neurin and cholin. Also the effects of latent appendicitis, disease of the gall-bladder, the pancreas, and the like. Again, surgeons (for example, Robert T. Morris) and bacteriologists are aiming to correct and prevent many causes of psychopathies through bacteremias, as the colon bacillus, by vaccinations.

When, however, there is evidence of pronounced disorder in function of the brain, central nervous system, the thyro-parathyroid apparatus, and other regulative mechanisms, the problems too often lead to confusion states closely approaching tragedy, and all the more imperative is a thorough investigation and a prompt

application of radical means for correction and conservation.

When, as is often the case, the trouble apparent can be referred to bad habit-formation, vicious home influence and training, there are often produced complex and bewildering defects in educability, requiring expert psychology as well as physiologic knowledge. Much can be done by training to restore the child to the norm.

In each and all the exigencies above indicated it will be obvious that *the earlier the recognition is secured, the better the results.*

#### VI.

"The child should be formed, not reformed," as Miss Alice M. Nash wisely asserts. The formation can be done only in the home and the school. Parents also must be formed by molding them as children to become efficient parents of children. There will then be needed less reformation by experts in atypical children. Dunces, reprobates, truants, cruel and vicious youngsters, can, in great measure, be prevented by starting children right in the earliest years, before plasticity is lost, before the finer sensitiveness and capacities are blunted.

Transmission of somatic (body) modifications is all-important. Ground for belief exists that the germ plasm (original material) is modifiable. There is much evidence to the effect that, by modifying and improving the environment of even the habitual criminal, the neurotic, the tubercular, the gouty and the victims of other hypoplastic agencies, the offspring is more or less improvable. The danger is that some children will be born worse than the parents. The worst cases should most certainly be prevented from procreation. It is not yet possible to destroy vitiated offspring. The whole fabric of society rests upon humanitarian feelings. Altruistic impulses may, and often do, go too far, and become not only present dangers to the community, but, when in excess, are in themselves evidence of deterioration in mental balance, moral tone—certainly of irresponsibility in the individual who is animated by and acts upon foolish wishes or vitiated impulses.

The subject of degeneracy has been much clarified by recent mental (psychologic) researches. Exact testing of the minds of backward children has made it plain that a large proportion of seeming incompetents are instances of developmental arrest, rather than of defect. The integrity of the mind may be fair, capacity for judgment more or less good, though capable of functioning only at a lower level of intellectual efficiency. It is claimed by experts in juvenile corrective institutions that by removing physical limitations (as defects in eye, ear, nose, etc.), and subjecting the children to properly graded teachings, about three-fourths can be made to evolve into fairly good citizens. They may, and often do, remain juvenile or childish-minded, but are still well removed from the infantile qualities originally displayed. Maturity in them is slow, but progress in the better elements of mentality may continue far into middle life. Juvenile criminals are, however, almost always subnor-



mal; the mental arrest is more final, constituting a permanent defect.

## VII.

Thus environment becomes a more promising factor in view of these increasingly exact findings. At least we are no longer left in a maze of conjectures. Thus, also, prevention of mental unfitness becomes more possible. Given opportunity to apply corrective measures, developmental guidance, and a pair of "morons," foolish or mentally retarded parents, may be made to produce children better than themselves, and their grandchildren may become a marked improvement on the original pair. Similarly we may find, by investigation (if data be procurable), that the ancestral stock, far back, was good, or even of high grade.

When eugenics shall have become what Galton expressed the hope it would be—a factor in national beliefs, "a religion," it will be possible so to direct matings as to secure large improvement in posterity. There are, however, limitations which must be recognized and more clearly defined in the future. At present we know that when an individual has enjoyed full privileges for mental development and fails to respond, there is an end to expectation. Such persons should not be permitted to beget offspring.

"Our characters are the product of heredity and of environment, and not the sum thereof. It is not heredity plus environment, but heredity *times* environment, which makes us what we are. This is constructively conservative; for, if heredity be poor, good environment may make as much of it as poor environment can make of good heredity. Nature can, in great measure, replace bad birth, and bad nature can destroy the advantages of good birth. But, under the same environment, good heredity will yield better results than bad heredity."<sup>3</sup>

## VIII.

Best results in schools for atypical children (backward-minded, hypoplastic) are roughly estimated at a gain of about .05 per cent. In a paper on the "Undesirable Citizen," I called attention to the genesis and evolution of the trouble-makers, the wayward, the petty evil-doers, the difficult boys, who are largely the product of special influences exerted on them during the plastic

years. A large proportion of children lack initiative, originality, impetus, right direction of energies. They are vacillators, overimpressible to good or bad pressure-currents (however unimpressible to finer influences); they can't run their own careers; are like discs of metal on which anyone can imprint the coin-mark. They reflect the color of their accidental environment. Those with whom they come in contact may be decent citizens, or shrewd, vicious opportunists, who seek the plastic individuals to make tools of them. In America our acquisitive tendencies overbalance our nicer impulses; we are inadequately safeguarded by wholesome traditions. Law appears to be devised to protect privilege, rather than to mete out strict justice. Hence arises an increasing group of flagrant defiers of the instinctive right impulses. Brilliant knavery is overmasteringly attractive to weak personalities. The clan instinct is strong in all boys, especially in the weak, the one who needs to be supported, carried along, to "go with the gang."

Hence, it is plain that to punish for petty offenses, or crimes, is barbarous, wholly ineffective, intensifies bad impulses, induces bitterness, a sense of injustice, ideas of revenge. The evil-doer should be safeguarded, trained. Some, a few of the younger ones, can be remade. None should be entrusted with responsibility till proven capable. Prisons should all be sanatoria, with hospital facilities, and provided with a staff of expert medical chiefs.

Reformation is always unpromising. Alcoholic and narcotic habitués are invalids from inherent defects plus evil habit formations.

"To me the two most sensible and practical propositions with which we have to deal are (1) lowering the number of defectives, delinquents and dependents; and (2) improving educational and environmental advantages of the whole population. The first belongs to the domain of *restrictive eugenics*; the second to *constructive eugenics*."<sup>4</sup> Dr. Solomon also quotes Huxley in speaking of the unfit: "We are sorry for you, we will do our best for you (and in so doing we elevate ourselves, since mercy blesses him that gives and him that takes), but we deny you the right to parenthood. You may live, but you may not propagate."

<sup>3</sup> Meyer Solomon, *op. cit.*

<sup>4</sup> Meyer Solomon, *op. cit.*

# PERSONAL HYGIENE

## I.

Personal hygiene includes the employment of various agencies capable of conserving human efficiency by revising and regulating the conduct of life in the individual.

At the top stands the broad subject of anthropology, the science of man or mankind; the study of man's agreement with and divergence from other animals; of his common and particular physical structure, his racial

peculiarities and intellectual nature; of the various tribes and races of men with reference to their origin, varieties, intermixture, customs, etc.; of the general physical and mental make-up, and evolution of the human race. Anthropology puts under contribution all sciences which have man for their objective.

In the United States our people are a raw mixture of many races, some similar, some markedly dissimilar.



The consensus of opinion is to the effect that the purer the race, the more uniform the conditions, the less will surprises and complexities be.

A department of anthropology is eugenics, the science of raising the index of efficiency by improving conditions of environment. This, again, includes betterment of the race, the family, through suitable selections, matings (eugenics), and betterment of the individual (personal hygiene).

By personal hygiene we ascertain, determine and apply rules of life, conduct, behavior, whereby latent energies, inherent capabilities for growth, development, etc., may be conserved, and means for so enhancing and amplifying human dynamics as to fit the individual to become the best his or her personal equipment renders possible. These are constantly subjected to revisions and alterations in accord with new knowledge and experience.

For convenience and system we may subdivide the subject of personal hygiene into three component departments, which overlap each other, but which deserve to be mentally visualized for practical consideration as separate lines of conservation:—

1. Conservative Personal Hygiene.
2. Constructive Personal Hygiene.
3. Reconstructive Personal Hygiene.

## II.

The power of environment to modify human fitness for better or for worse is enormous, and as yet undetermined.

The practice of medicine was commonly divided into two departments: (a) *prevention*, and (b) *cure*. To these has been added a third, that of (c) *conservation*.

In pursuing methods for conservation there is also accomplished much of both prevention and cure. So forceful may the practice of conservation become as to prove the most important both to patient and to physician. Industries develop in proportion as rewards are offered. In the division of labor in medicine the only immediate reward for prevention comes through salaried positions, such as organizations, boards of health, professorships of sanitary science, and the like.

The chief reward for the physician comes from the care and treatment of disability and disease. The subject has never occupied the attention which its scope and possibilities deserve, because there is so little remuneration from teaching or enforcing measures for sanitation, for conservation. The public is, however, beginning to realize the vast possibilities in learning and practising conservation, hence there is a growing demand for knowledge. Where there is demand there is always supply. The supply is being freely afforded by persons of all sorts and degrees of equipment, who see where they can earn money by teaching how to improve living conditions. Some of these have good ideas: most are founded on error, or partial error; they give what the public wants, good or bad. The only solid ground for

final success in human conservation is to attain an adequate knowledge of the fundamental principles of medicine, from biology up to the last refinements of therapeutics. In the subdivision of specialism, therefore, there is need of experts in conservation, in personal hygiene. Here there is a field of research of increasing usefulness and rewards.

Dogmatism is nowhere so out of place as in the teaching of personal hygiene. It is characteristic of science to perpetually revise, amend, and reject ideas and methods. Views and teachings on personal hygiene have varied, and still vary, because of diversities in individual taste, capacity or ignorance. When taught in medical schools, the teacher too often permits himself the largest liberty of rambling; seldom takes the trouble to review critically the mass of valuable findings scattered plentifully throughout literature; he talks like a pulpit orator, assuming the divine right to teach simply because he occupies the rostrum. The outline presented here is inadequate, but we claim that this subject should be accorded the same attention given to other branches of scientific medicine. It has points of contact with most of these. Some conclusions are cheerfully appropriated, others made to serve as component or contributory parts. Our object is to bring these correlative factors into harmonious interrelationships.

## III.

1. *Conservative Personal Hygiene*.—This department of human betterment through regulation of conduct, large and varied as it is, may be here disposed of in a few words, that we may pass on to those inviting fuller consideration. This is much the same as *Eugenics*.

Under *Conservative Personal Hygiene* (or *Eugenics*) we may include those common-sense measures fairly well known and of recognized efficiency, which contribute to the maintenance of fitness in normal human beings, by improving environment, conduct of life, in the physical, mental and moral domains, to encourage the evolution of all inherent energies. Environment influences the tangible body, and also the psychism. Everyone requires a constant revision in agencies for betterment, from cradle to grave, a ceaseless vigilance and industry. Everywhere, and for all, there are difficulties to be overcome. No full development can be achieved except by struggle, competition, and unremitting endeavor. Victories, or highest rewards, not only gratify, but lead to increased powers, wider vision, mental and moral elevation, to the approbation of one's own conscience; indeed, to any height of character, to final oneness with divine personality.

Memories are called forth, association processes stimulated, by chemical and physical agencies. Among the forces of environment producing reactions upon the consciousness, encouraging initiative, determination, selection, are those chemical and physical forces such as light, darkness, heat, cold, work, rest, dryness, moisture,



food, hunger, attention, sleep, etc., etc., and always the mysterious and compelling force of electricity.

The main objects of life are to secure appropriate and eliminate adequate amounts of oxygen, nitrogen, carbon, phosphorus, and sulphur, to meet the requirements of metabolism, and to convert these into, and maintain, healthy tissues.

Along with opportunity there must also be intelligent guidance from within or without, or, better, both. Through experience are formed habits of selection and rejection. The individual cannot be wholly receptive or passive. To pursue conservative measures, however, no large amount of effort is required. While it is desirable to accept with philosophy that state of life to which it may have pleased God to call one, the exigencies of every day, or week, or year, call for modification of existing conditions, making for improved ones, in mental attitudes, surroundings, temperature, ventilation, clothing, food, effort, play, the affections, attention, and the like.

To secure what is plainly desirable one must guard against deleterious agencies, between which we are steadily learning to differentiate with some accuracy. Among these are mosquitos, flies, hurtful degrees of light, heat, fatigue, and the like. The subject involves the whole range of sanitation, federal, local, personal, in which the individual is first negative and next receptive, rather than active. Always the element of fatigue must be reckoned with; a peculiarly hurtful agency in the young. Fatigue, leading to exhaustion, is capable, not only of impairing function and retarding growth, but also of damaging structures, devitalizing organs, opening the door to all sorts and kinds of morbid agents, infective or metabolic. Excessive and continued fatigue is capable of defeating any or all the best agencies for conservation.

#### IV.

2. *Constructive Personal Hygiene*.—The factors in *Constructive Personal Hygiene* are, first, an individual who is unimpaired by disease, but is not up to the norm; whose deficiencies or defects are capable of demonstration or reliable inference; and, second, the selection and application of constructive measures, modifications of mental attitudes and of environment, capable of amplifying latent powers and leading toward the degree of development of which the individual is susceptible, consonant with inherent powers and limitations.

Here we have at command all the powers grouped under *Conservative Personal Hygiene*, and many more. The task is to determine the nature of the concrete problem, its possibilities, and its needs, and to make wise and expert use of our resources consistently and persistently.

#### V.

3. *Reconstructive Personal Hygiene*.—The factors with which we reckon here are, first, an individual of any age and condition in life, whose constitutional vigor or health has been so depressed by disorder or disease

in the mental or physical domain as to place him or her below the plane of customary efficiency; and, second, the eliciting or cultivation of all those forces for repair of existing causes or phenomena of disability which can be brought into action, and also the *raising of the index of efficiency by bringing into the field of action hitherto unrecognized capabilities*, rendering them available, till a higher plane is reached than the individual has heretofore ever enjoyed.

This can be done in more instances than is ordinarily regarded as possible, and to a degree oftentimes far beyond expectation.

Among the reasons why this is not done as often as it can, and should be, are these: the individual, or those who exert (or should exert) authority over him, too often will not co-operate frankly, faithfully and consistently with the adviser. Also, medical advisers are too often content to act merely as repairers of obvious or recognizable disabilities, and to lose sight of their higher duty as conservators of both health and efficiency. Nowhere in the domain of medical art does there lie larger opportunity for gratifying results than in this realm of *Reconstructive Personal Hygiene*.

The world's most important conservation problem today is the development and direction of human intelligence, including the brain-power of mankind.

Life, movement, being, depend upon the fullest capacity in the sentient mind, the cerebral mechanism, whereby our superiority over the lower animals is demonstrated. The ultimate destiny of our civilization will depend upon the degree of efficiency of thought-power in future generations. Greater mental efficiency is demanded, not only in all modern industrial pursuits, but also in defensive and aggressive activities. Steps in advancing civilization are marked by increasing strains, burdens, insults, thrown upon the structures of the body, especially the most delicate of all, the brain and nerves. Each new crisis in civilization calls for the exercise of higher intelligence, increased cerebral capacity, better judgment in "the man behind the gun."

Primary education, now in an unsatisfactory stage, is the domain in which best advancements should be initiated. How to train the young child to evolve the best that is in him, at the earliest possible moment, and in such a way as to insure uniform, consistent progress, is the problem of today, and all days. To this end much of the best modern thought is being devoted.

Body and mind are essentially one as receptors and transformers of environmental influence. The ideal aim of health conservators is to reinforce inherent energies, to perfect latent or impaired powers. It is but a limited conception of professional duty to merely repair damages or injuries, to overcome effects of disorders, or even to cure actual disease. In the field of restoration large individual abilities are exhibited by the exponents of restricted specialisms. Best effects are, even there, due to the wisdom shown in dealing with the broader factors involved in supplying constitutional needs. The



solution of most of these problems often lies in estimating the exact status of the grosser mechanisms and in correcting many contributory disabilities not ordinarily recognized as significant.

#### VI.

Every person, young or old, is capable of a notable increase in vital dynamics by revising modes of life. This is particularly demonstrable as middle age approaches and tissue elasticity subsides. From earliest years the child begins to retrograde, to lose pliability, adaptability; to fall into one or another form or kind of disability. Some of these deviations merge into serious retrograde changes, often shown by rigidities, densities, caused by faulty habits or vitiated automatisms, due to omissions of suitable variety in both impulses and movements, whereby alone symmetrical action and reaction are assured. The factors involved are both physical and psychic. The deadening effects of routine, of monotony, are well known. Stimuli should be varied; suggestion or autosuggestion is rarely adequate to preserve rhythm. Individual resourcefulness is seldom large, or only exhibited in restricted and specialized lines. Hence, it is of value to invite skilled direction from one who has achieved a well-rounded familiarity with human perfectibility needs and derangements, and can judiciously particularize.

Human health, constituting as it does the basis of economics, is steadily coming to be recognized at its true commercial value. Bread-winners especially are awakening to this fact, and beginning to appreciate expert professional aid in perfecting and maintaining bodily efficiency. That physician is most wise and useful who omits no opportunity to estimate the fundamental factors in any problem presenting. Not only should he meet immediate exigencies, deal correctly with confronting difficulties, but he should search out and correct underlying and contributory causes, which may keep the individual on an inferior plane of capability. He should do much more; make occasions, seek earliest possible opportunities to learn all relevant facts bearing upon the vital status of those in his charge. To accomplish this the home group requires constant and varied observation and education.

#### VII.

The tendency is for each good citizen to make the best of his condition, to treat lightly unobtrusive ailments, to forge energetically ahead, ignoring slight symptoms, especially psychical phenomena, so that too often serious states are revealed only when far advanced or too late. This disregard of ailments is commendable; it makes for renown, for character-building, for success. Through such pertinacity only are the highest ends achieved. Carried to its logical limit, however, it lures the ignorant optimist to a state of perilous monism. Conversely, to err by overmuch self-searching leads to hypochondriasis, timidity, inefficiency. Most physicians are aware of this, but there are different degrees of

awareness. Some impressions, even some convictions, are cloudy, inexact, or, worse, fail to act as stimuli to right action. A nicety of judgment is needed in solving such problems. For instance, it will prove a boon to a man complaining of a slight dyspepsia for the physician consulted to discover and rehabilitate an organism never brought to that degree of vigor and stability which, if attained before, would have enabled him to become a power. Hitherto he may have been held by removable limitations to some petty, hireling post.

He may be handicapped by physical defects, wasteful in method, underdeveloped, lacking in some essential particular, or all these combine, to keep him low in the economic scale. Unwarned, confident, he often assumes increasing burdens and presses on to, or beyond, the limit of his working powers. There then ensues some minor or major accident, and a useful life is warped, mind and body are distorted, perhaps thereby also complicating important collateral domestic or financial interests. All this dwarfing could have been avoided by adopting one or two courses of action: (1) had the family physician been observant, wise, and, above all, dominant, corrective measures could have been instituted sufficiently early; or (2) had the individual himself been duly alive to his economic needs, advice would have been sought capable of establishing full working efficiency.

#### VIII.

Parents are not blind to the value of first-class working efficiency, however blind individuals may be to their own ultimate advantage. For the relief of actual disease or damage, even more so for fancied ailments, they are often willing to consult a physician. When they arrive at the conviction of a need for general or special betterment, they are usually prepared and willing to spend time and money on measures confidently indorsed. If, however, they would realize that the best and most complete plan is to consult a physician promptly and frankly, or to seek advice periodically as to how health may be retained, powers improved, and a relative perfection achieved, by far the greatest gains in efficiency would follow.

Remedial measures are efficacious in proportion to (1) the judgment and care exercised by the adviser in searching out causes; and (2) the degree of co-operation supplied by the individual. Success depends upon a thorough estimation of the specific needs of each person.

Experience in endeavoring to solve the complex problems of indefinitely lowered health, to get that uplift so desirable whereby we may make effective previous efforts, has impressed me with the importance of securing greater elasticity of the tissues and promptitude in the reaction-times between controlling centers and outlying motor parts. This constitutes a key to vascular competence by enhancing the vasomotor reflexes throughout the whole system. The grosser mechanisms often need even more attention than is afforded by customary methods of organic regulation, because without first



achieving elasticity, curative results are not so readily secured. Full organic competence is not sustainable unless the supporting structures are maintained in normal degrees of mobility. The lungs, heart, etc., for instance, cannot do their perfect work in a contracted thorax. The abdominal organs, vessels and tubes are unable to perform their full duty unless their supporting structures are adequately strong and elastic to exercise normal counter-pressure. The hollow organs, both above and below the diaphragm (midriff), need to be held poised in their normal interrelationships, so that vital hydraulics, connecting-tubes, large and small, suffer no interference from undue compressions. Poisons from within and without work greater harm unless local congestion is relieved. No amount of other salutary agencies can accomplish much if the normal stimuli to circulation lack something of necessary impulses and responses. The most powerful drugs can do little for ultimate restoration of capacity if the great oxygenating laboratories, the muscles, cease to do their essential co-operative part.

#### IX.

The benefits which we know to follow physical activities are explainable upon this same principle of responsiveness to reflex motor stimulation through vasomotor subcenters. For those who are unwilling, unable or organically unfit to avail themselves of open-air sports and muscular activities, as much, or even more, can be accomplished by brief but exact education in the cycle of motor impulses and responses, along with correction of local rigidities in the skeletal structures, direct or collateral. There is needed a precise estimation of what is amiss in the particular person, by whatever means the individual taste, opportunities or organic competence makes practicable, and correcting, in so far as is feasible, the observed shortcomings. By securing greater elasticity of the less used structures we can accomplish improvements in many unexpected directions, among the chief of which is securing harmonious interreactions through systematic motor stimulations. The body is dependent upon wholesome motor and kinesthetic stimulations for the maintenance of diverse nutritive processes.

Normality of posture is essential to organic competence. Erectness is compounded of vertical and horizontal lines from which divers other lines may depend. While curving lines make for grace, they tend to impair the power of support. The weaker the person the greater are the curves exhibited. Much bodily weakness is conditional upon that exaggeration of dependent lines which evidences incompetence in the supporting structures. These supporting structures may be at fault at both origin and periphery. For example, the displacements of organs arise in central defects, which usually can, and should be, radically corrected by improving the vital index through attention to the primary fountains of force.

A secondary cause of organic displacement is loss of integrity in agencies exerting support supplied by col-

lateral and external structures. Where these are voluntary muscles their vigor must be enhanced by all known means, among the most definite of which is suitable use by exercise.

#### X.

The key to erectness, hence to skeletal efficiency, hence to position of organs (visceral interrelationships), hence to an important factor in organic competence, lies in maintaining the normal attitude of the thorax. This assumes the maintenance of a relatively straight backbone and horizontality of ribs. When the ribs remain relatively horizontal, and are easily held well up to their normal levels, there is thus afforded adequate support to the diaphragm, the internal and external abdominal muscles, and to all those structures combining to afford visceral support as well as respiratory acts. A surprising degree of improvement in organic competence is thereby afforded. To secure this key to erectness (the thoracic normality) requires intelligent motor education.

Training of the child in accurate, purposeful movements should be for each and all, not merely for a selected group. Group specialization and giving attention to picked athletes is altogether wrong, because those who need most training thus get least. Inferior physiques require most careful training. Each individual should be educated, not so much in the line of his proficiency as in that of his deficiency. The object of training is not overspecialization of the best endowed, but a well-rounded development for each and everyone; not the overtraining of a few, but a race of men abounding in endurance, energy, powers of resistance and initiative.

#### XI.

*Ventilation.*—The value of air in motion; of cold as a stimulant; of tissue respiration.

Facts are said to be stern realities. From facts we can learn principles of action; from enough of them can be deduced scientific laws. In estimating facts it is essential that they be judged in their entirety, with full consideration of all contributory evidence, and relationship to other, collateral facts; otherwise we may continue to blunder, and reach only partial or erroneous conclusions.

It is natural to appreciate and extol creature comforts, warmth and shelter after cold and exposure; sunshine after clouds and rain; a full stomach after starvation; rest after struggle; uniform, cosy conditions of life after raw buffetings. None the less, it is a fact, abundantly verified by universal experience, that peoples and races evolved in cold, cloudy, windy countries, such as for those of us whose ancestors came from northern Europe, require as an essential condition of health and sustained vigor, hence of happiness and efficiency, to be subjected to the very reverse of the above sybaritic conditions of ease.

First of cold. While it is true that exposure to intense and prolonged cold can and does produce hurtful, even fatal effects, it is, however, in moderate degrees,



of the utmost value in stimulating our organisms, in restoring our tissues to the norm when seized upon by deadly disease agencies, as in pneumonia, many forms of infectious fevers, and especially in tuberculosis. Cold raises the vascular tension in enfeebled children, increases appetite and nutrition, assists the conservative action of fever, contributes to restoration of the vital balance. It is known that cold is one of the most powerful aids in development, one of the most efficient agencies for cure of disease and relief of vital depression.

Heat, on the contrary, especially prolonged heat above 80° F., is one of the most powerful depressants; may turn the scale in illness toward death, or itself induce fatalities.

Air in abundance, in motion, especially in the open, or directly from the open, is an essential to the maintenance of health and a powerful aid in restoring health where it has been impaired. We are only recently, and not yet wholly, emancipated from the erroneous idea that night air is "charged with deadly miasmas," mysterious bogeys or evil spirits. The fact has been demonstrated that malaria, cholera, yellow fever, and many so-called "powers of darkness," are conveyed by living things, mosquitos, and other insects. Typhoid fever, hitherto known as a "water-borne disease," is also conveyed by houseflies.

Winds may be disagreeable, even terrifying; yet are distinctly salutary.

## XII.

Thus, one after another, are our fears of unknown agencies of evil cleared away by facts, learned from observation, reflection, deduction—in brief, by science.

It has been shown that consumption is not caused by the tubercle bacillus alone, but there must be added the further factors of faulty hygiene and an artificial atmosphere of living. At least 30 per cent. of all school-children are said to exhibit demonstrable evidence of tuberculization.<sup>5</sup> It is further stated that, by the fifteenth year, 75 per cent. of all children are thus affected. Some seeds of infection thus implanted will perish; some will grow and cause destruction. The evil flame must be stamped out early in each one. The problem is by no means easy, but the main principles are now made clear. Natural immunity increases as the individual grows older, or, at least, toward the period of maturity. Tuberculosis is a disease of early life; that is, has its beginnings then. Conditions for growth and development must aim to strengthen immunity, to reach perfection of maturity.<sup>6</sup>

We are still in the thralldom of doubt over the question of whether drafts of air induce "colds." Architects

exercise the nicest precautions when installing systems of heating and ventilation, whereby we can heat our houses to summer temperature and supposedly keep out the demon of influenza, pneumonia, bronchitis, and the like. The majority of mankind of today firmly believe it is necessary to their welfare that they live, during cold weather, in a uniform temperature of 66° to 70° F.; to have just enough air coming in to "get rid of the foul, used-up, vitiated air, full of CO<sub>2</sub> and animal emanations, effluvia," by elaborate "systems of ventilation."

As a matter of verified fact, while confined air, surcharged with human exhalations, does offend the nostrils, induce distress, even faintness and moderate harm, it can be rendered endurable, by being kept in motion, especially by being cooled.

In short, "catching cold" is a process of infection hyperinduced by lowering of the autoprotective powers by remaining quiet a long time in superheated air, while overclothed and overfed. It is an interesting, rather startling fact that half-starved, half-clothed people, overexposed to cold, as on a raft at sea for hours or days, do not "catch cold." Neither does the pioneer in the Arctic outlands. Nor does the sailor in the old-fashioned "fo'castle"; though the modern sailor, living in steam-heated floating palaces, does "catch cold," and develops tuberculosis to such an extent as to create alarm for his collective welfare. Overwarm clothing, especially woolen underwear, is a fertile source of so lowering the resisting powers (by relaxing surface structures) as to invite infection. It is far better that the underwear be too light than too warm.

## XIII.

Excessive light, especially sunlight, is only second to protracted exposure to heat as a destroyer of energy. A climate all sunshine and dryness, and windless, not only impairs somatic (cell and body) powers, but dethrones reason (Charles A. Woodruff). Children exposed for hours to the sun-glare of the seashore become feverish, lose nutritive balance, fall ill (Grawitz).

During the hot, protracted, semitropical summers of the United States, it is to the highest degree imperative to protect infants and young children from the midday sun, and for several hours; nor is it well for them to remain very long in the sun even on cool days in the summer. Sun-glare is destructive to vital resistance; the extraspectral rays which sunlight contains, exert a baneful influence nearly equivalent to the heat.

"Biotic energy arises from the transformation of those other forms of energy, heat, light, sound, etc., which react upon the transformer, the living substance" (B. Moore, quoted by Leonard Hill).

"A sense-organ is not stimulated unless there is change of rate in the transference of energy. If a weak agent is to stimulate, its application must be abrupt" (Sherrington, ditto).

"It is not the wind God tempers to the shorn lamb, but the skin of the lamb to the wind. Monotony of

<sup>5</sup> Phillip, *British Medical Journal*, April 20, 1912.

<sup>6</sup> A. Gerrman, Berlin. During the last decennial period there was a decrease of 18.7 per cent. in deaths from tuberculosis in the registration areas. (*Boston Medical and Surgical Journal*, July 4, 1912.) Most of this result is due to Reconstructive Personal Hygiene.



sedentary occupations and of an overwarm, still atmosphere endured for long hours, depresses vigor, induces the atrophy of disease" (Leonard Hill).

Hence it is plain that alterations of struggle and rest, of cold and heat, of hunger and repletion, evolve vigor, stamina, efficiency.

#### XIV.

A child long confined to the schoolroom is in a constant state of nervous tension. He considers alternative lines of purpose, of action, is excited but passive, held to inaction; the natural outlets of energy, muscular responses are not permitted to follow and relieve the overstrain on body, mind and disposition. Such a child must be relieved by permitting free action once in so often, or mind and body will both suffer seriously. Yet the city child, who is well fed and irresponsible, who runs the streets freely, can and does grow to a size and strength comparable to those of a country child.

## HINTS AND WARNINGS IN BRINGING UP INFANTS AND CHILDREN

### I.

All parents cherish ideals to which they wish their children to conform; some are wise, some foolish, and all are vague. Better results would follow some agreement as to a group of qualifications, the desirability of which could be accepted by all. Each could then exercise the liberty of specializing safely according to his own taste, training and acquired beliefs.

We can all agree in the wish to bring up our children as good men and women; in the purpose to make them good citizens, devoted body and soul to the best interests of social welfare; men and women having at heart the best interests of their fellow-men, the nation, the race.

"The purpose of a liberal education is, as the Scriptures put it, to have the eyes opened, to be free from all delusion, illusions, and the *Fata Morgana* of life.

"A liberal education liberates us from subjection to superstitions, fears; delivers us from the narrow bonds of prejudice, from enslavement to all degrading influences. It is not to live in a fool's paradise, or to go through the world in a posthypnotic state of negative hallucinations.

"Open the eyes of the young so that they shall see, understand, and face courageously the evils of life.

"In every young child there is a wealth of latent power, hidden treasure, inaccessible till brought to the surface by experienced, solicitous parents, teachers, and mental experts. Too much thinking or overstudy does not cause nervous or mental breakdown or disease. These are produced by hereditary arrests or defects, aggravated by worry, emotional overflows, irritations, absence of right guidance in beliefs or conduct. Watch

Muscular exercise affords varied and valuable fields of usefulness; it relieves the heart through emptying the veins; it replaces fat with muscle, and thereby prevents the stagnation of blood and lymph in tissue which does not spontaneously expel it; increases oxygenation of cells and tissues; enhances digestion and metabolism. The brain-worker at his desk does accelerate his heart by his work; his blood-pressure is raised, but he has neither muscular outlets, changes of position, nor respiratory relief to pump the currents round; vasoconstriction of the arteries (produced by excessive toxic wastes) in the lower limbs thus invites degenerative change in vital structures.

Only by free activities in the open air can we hope to maintain natural resistance,—immunity.

Any educational methods which interfere with spontaneous movement do more harm than good. Strained attention continued not only fatigues, but exhausts; produces lasting and serious damage on growth, and development in both mind and body.

for manifestations of progress and set the child's feet on the right road; encourage, explain, persuade, cultivate the critical faculties, the judgment. Teach to differentiate between good and evil, the desirable and the undesirable; guard against evil fears, superstitions, morbid prejudices, and, above all, credulity" (Boris Sidis).

Teach facility of awakening in one's self while under education ideas which, associated with a different mood, are capable of carrying out acts demanding reflection and choice.

### II.

The best training for the child is to endure minor shocks, cold, heat, noises, light, pain, and the like stimuli, at first when anticipated, later when unexpected, progressing from less to greater shocks. Strong feelings act as shocks and check power of reflection, decision, determination. Inculcate a pride in worthy endeavor, in doing all things well; commend for performance of skillful acts, and displays of good judgment; stimulate the joy of accomplishment, of triumphs engendered, the fulfilled desire of productive activities.

Practice in willing and doing is essential to the acquirement of poise. During periods of emotional tension it is best to direct by calm authority, demanding prompt obedience; the more simple, quiet and gentle the means to arrest excitement, the better.

Parents can commit no greater blunder than to deceive, to shelter a child from experiences which may disturb emotion. Children of insecure nervous balance demand the best possible wisdom in parents, nurses, teachers. No price is too high to pay, no labor too onerous, to lead the child away from wavering emotional



states toward a robust, well-balanced personality. Such children should be brought up in the utmost simplicity, and always under wise guidance. Graded responsibilities are essential; interesting work is a cure for timidity, indecision, and explosiveness. Overindulgence is as bad as brutality. Authoritative affirmation is here better than suggestion; too much explanation often confuses; confidence in a parent frequently depends on the judicious use of dogmatism.

Companions of the same age are absolutely essential. The overprotected child becomes the future weakling, becomes enfeebled; it may, and often does, suffer lifelong woes from suppressed impulses (complexes). Solitariness induces diffidence, sensitiveness, leads to self-distrust, weakening of mentality (psychasthenia).

Authority and loving kindness should characterize the acts of all who assume to direct children, especially those of hypersensitive make-up. Cultivate habits of candor, truth and accuracy; truth in act precedes truth in speech. We must learn to do the right thing before we can form concepts of right.

The unknown or mysterious is liable to agitate anyone. Even real dangers can be reduced one-half or to nothing by rational explanation, after the real significance of things has been made clear.

Approbation for intelligent initiative, rewards for courageous acts, should be liberally supplied. By such means the weakest often become the strongest and most efficient. Above all, teach the principle of common-sense views of actualities; inculcate a sense of proportion in all things. Provide abundant outlets for the inborn spirit of adventure, which is the great school of character. The pioneer spirit, the war and chase appetites, are either exercised frankly and freely, or illicitly, or they are suppressed, thereby making for incompleteness, mental dishonesty, confusion, volitional enfeeblement.

Choice of action, determination, will, can all be readily cultivated as well as memory. The will is not so much a fountain of force, of dynamics, as it is an instrument to apply the force, the tool-holder of the lathe, to put the power where and when it is wanted. We increase our will capacity (volition) by using it more and more accurately, and to the limit, in any given direction.

Moods, caprice, when exhibited, should be replaced by conservative lines of effort, in forming and executing definite resolutions. A calm disregard of an outbreak of temper is the best attitude to assume to check its flow. Sympathy and taking sides is fatal. Too much tenderness is the greatest error to commit with a child of insecure nervous balance.

### III.

Teach the meaning of life, which is a steady progress in character growth, a forming and helping one's self, and even more, in forming and helping others. We gain power, we "acquire merit," by bringing out our stored-up

reserves of energy and applying them to steps of progress.

Sex impulse dominates every man and woman, hence also the world, in many essential directions. The sooner a child learns the truth about sex, its power, its limitations, its needs, and its non-needs, by so much will one of the gravest perils be reduced to determinable proportions. Principles of sex are best taught by first inculcating principles of biology; these are then readily made applicable in confidential chats by parents or teachers.

Some of the most obstinate mental disturbances (psychopathies) arise from sex impulses suppressed or indulged, or interpreted wrongly, inducing shame, fear, confusion, morbid introspection.

The highest character is one so confident of well-balanced powers as to feel willing and generous in helping others; one who sacrifices self, ease, desires; is able to cheerfully work and wait, to fight, to fall, to rise and fight again, and never to know when overcome.

Fatigue states bring about insufficient oxidation, intestinal irritation. These frequently occur, their effects are readily overlooked, and are often accompanied by a state of nerve-insufficiency, which is at the root of many mental upsets (psychic perturbations). These may constitute mere exaggerations of inherent tendencies of character, whether normal or morbid.

"The essence of prevention of nervous disturbance is to associate useful activities with agreeable feeling tones, and to dissociate from useless or injurious acts the agreeable feeling tones that may have been acquired. . . .

"The interest sentiment is an essential of all psychology, as well as of effective pedagogy. Quietly substitute a new interest sentiment for a disagreeable former one, and the feelings are changed (calmed) by distraction and substitution. . . .

"Those who do not depend on reason must *grow* into feeling by accustomedness, by reiteration, to force into the unreasoning affectivity a realization. . . . This is the method of pertinacity" (Tom A. Williams).

Discourage too great a desire for approbation in little things as well as big; it distracts attention from desirable objects, is often dangerous as well as disturbing to progress.

Normal habitudes are essential; while cultivating variability beware of demanding or enforcing markedly unusual things; it upsets the child's whole world of fitness.

Habits of orderliness and precision are to be inculcated, yet not enforced too dominantly, or they may become pernicious.

In brief, a wise parent may not need to search the teachings of psychologists to learn how to bring up a child. A man may not need to know the science of law or economics to undertake large ventures. No end of blunders are saved, however, to the man who knows the rules of any game before assuming such responsibility as conducting his own child in the big game of life.



## AGE AND AGE VALUES

Age is supposed to be merely the time one has lived. It is something more, an index of stages in development both of mind and body. This may be called the *relative age*, but the term *age values* gives more clear and exact idea of what we need to consider in determining forms and kinds of education; also, in making of a child what we should expect it to become, in accord with its inherent powers, mental or physical; its capabilities of knowing, understanding, doing, of endurance, and of resistance to fatigue and disease.

In the estimate of the law a child is as old as the period of time it has existed since birth, measured in hours, days, years, or fractions thereof.

### I.

Age should be determined by the parent as well as the physician, teacher, or employer of labor, not only in terms of chronology, but also in those of growth, development, evidence of advancing maturity in mind and body. Hence, it is becoming customary to estimate age (in the light of recent biologic and psychologic investigation) with reference to growth of mind, functional capacities, anatomic, and structural evolution.

Progress in nutrition in infants is readily determined by measuring increments or retardation in height; increments or losses in weight, in girth of chest, of limbs; also in the biochemistry of the urine, feces, and the like.

Mental and physical differentiation in age has as yet only proceeded sufficiently to demonstrate certain highly significant facts. When they have reached a point where precise tests can be uniformly and intensively applied, a marked step forward will have been reached in our understanding of a large number of practical problems in human conservation.

Children brought up under almost precisely the same environment, subjected to similar conditions, are well known to differ more or less definitely in the rate, character and completeness of advance; also differ independently of effects of any accidental agencies for pushing or in holding them back; in stimulation or retardation. Primary differences reside in variations in the inherent factors of growth exerted upon similar yet shifting growth values. In some directions or features growth progresses more rapidly, in others more slowly; in others, again, a rate is maintained in accord with established averages.

Hence some children conform, as nearly as can be determined, for their chronologic age in mental and physical correspondences, to the norm of their family, their race, locality and other conditions of environment, while others will exhibit more or less pronounced differences in one particular or another. These divergencies it may be necessary to determine with precision, so that decisions can be formed as to a number of points bearing upon health or unhealth, mental or physical education, or the adaptability of the individual to such changed or changing conditions as may come under consideration.

### II.

Mental or psychologic age is determined by applying formal tests covering the principal mental processes, such as perception, imitation, conception, attention, memory association, and reason; or, in some instances, two or more in combination. The demonstration of one psychologic process will often perforce involve another. Also certain motor factors are involved, in speech, emotional control, dexterity, and capacity for sustained endurance, and the like.

The personal factor in the examiner must be carefully subordinated; accuracy is only to be assured by exercising tact, gentleness, patience. Diagnoses thus made by these mental tests are based on direct evidence; they should never omit consideration also of ancestry, states of nutrition, of anatomic faults, of local disorders (as of sense-organs), of domestic ignorance or foreign parentage.

Tests thus made, by the Binet method, are fairly accurate from the third to the eighth year, and by them one can be sure to detect evidences of mental retardation. After the eighth year variations within normal limits become more numerous.<sup>7</sup>

Three principal ways of expressing age are recognized:—

1. In terms of time ("chronologic age"—in minutes, hours, days, and years).
2. In terms of physical development ("anatomical age," growth of structure).
3. In terms of functional activity ("physiologic age," of less or greater capabilities).

These three conditions of age are closely correlated, but there are distinguishing characteristics in each which fully justify separate consideration by all who have to do with the care of children.

Age is also to be divided into *epochs*: "Prenatal" (before birth), and "Postnatal" (after birth).

The prenatal epoch is again to be divided into the embryonic period from the time of fertilization of the ovum till the organs are clearly formed, about 60 days.

The fetal period, which is from the end of the embryonic period until birth, about 271 days, and the postnatal epoch, divided into eight periods, as described below:—

1. The newborn baby; about four or five days; till the umbilical cord is detached.

During this period the baby undergoes sudden and radical change in mode of breathing, of nutrition, in getting accustomed to those radical alterations in surroundings, in adjustment of its heart to new conditions, the establishment of primitive movements, responses to

<sup>7</sup> Many of the following facts and their arrangement above are taken from an admirable article in "A Reference Handbook of the Medical Sciences," third edition, eight volumes (William Wood & Co., N. Y.), by Robert Payne Bigelow.

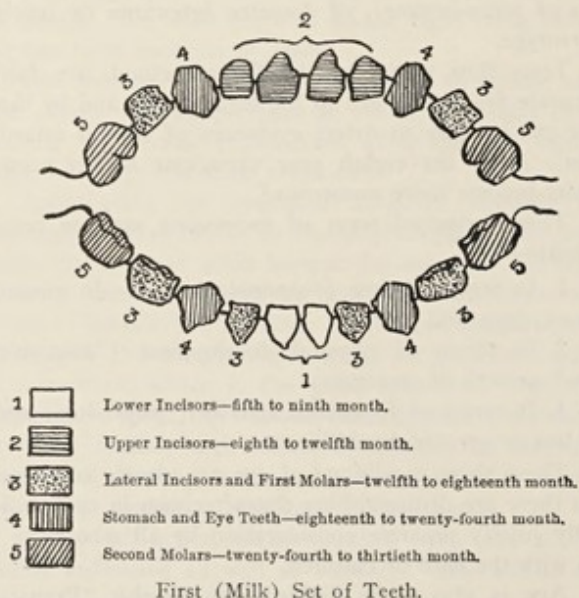


irritations; bringing the sense-organs into relation to influences from without and from within.

There is loss of weight during the first few days, which is soon made up, and a steady increment becomes established.

2. Early infancy, from the dropping of the cord until the first tooth erupts at the seventh or ninth month. This is the epoch of most rapid growth; the skeleton is still mostly cartilage.

The notable tendency is to grasp things; the sense-organs become fitter to do their appointed work; the face shows animation and primitive vocal acts begin and grow in variety and significance, in motion and emotion. During this period inherent weaknesses and malformations are among the efficient causes of death; also the infant is peculiarly susceptible to derangements of digestion, of bronchia of the lungs, from which serious ill-health and fatalities readily ensue.



3. The third period, later infancy, is marked by the eruption of the first tooth and continues until the teeth pass through their progressive stages from temporary to permanent, at about the seventh year.

A diagram shows the average ages at which the teeth normally erupt; first lower incisors at six months, first upper incisors at ten months, second lower incisors at sixteen months, second upper incisors at twenty months, first lower premolars at twenty-four months, first upper premolars at twenty-six months, second lower premolars at twenty-eight months, second upper premolars at thirty months, and canines at thirty to thirty-six months. During this period the bones of the wrist are indicants of development, changing from cartilage to bone in a definite order and at definite chronologic ages. This is the age of walking and talking, beginning with monosyllabic babbling, articulation develops, and through imitation the child learns to speak, about the end of the first year being in possession of a few simple words. Walk-

ing develops through sitting up, standing, creeping, and assisted walking, until by the end of the third year, these movements are easily co-ordinated. The chief causes of death during the first two years are diarrhea, diphtheria, and croup, with scarlet fever important in the fourth and fifth years.

4. Childhood, the fourth period, begins with the eruption of the first true molars and ends at puberty, about the thirteenth or fourteenth year. At this time the brain has acquired nearly its full size and weight, health is at its best, activity is greater and more varied than ever before or after, and there is peculiar resistance to fatigue; independent interests develop, perception is very acute, and there is great immunity to exposure, danger, accident, and temptation. Reason, true morality, religion, sympathy, love, and esthetic enjoyment are but slightly developed. The average age of eruption of the permanent teeth for the sexes is, for the first molars five to six years, first incisors six to seven years, second incisors seven to eight years, first premolars nine to ten years, second premolars ten to eleven years, canines eleven to twelve years, second molars twelve to thirteen years, third molars eighteen to twenty-five years. More deaths occur in the first half of this period than in the second half, with diphtheria most frequent, and scarlet fever, tuberculosis, and pneumonia next in order. In the second half of the period tuberculosis becomes most important, with typhoid fever second, appendicitis third, and diphtheria fourth.

The period of adolescence covers the years from the beginning of puberty until full stature is attained, from about twelve to twenty-one years for girls, and fourteen to twenty-five for boys. In girls the first menstruation is ordinarily considered the beginning of the period, and in boys the appearance of pubic hair. The onset of adolescence in girls varies from twelve to twenty years, with sixteen as the year of greatest frequency, but there is a factor of geographical situation, pubescence being earlier in the more southern countries. For boys pubescence is complete in about 50 per cent. by the middle of the fifteenth year, but here individual variation is marked, and climate must be considered. During this period, the rate of growth, which has decreased during later childhood, suddenly increases again before finally falling off. There is an acceleration in weight and strength at the same time. There are other structural and physiological changes characteristic of the period, (quoting Hall): "Adolescence is a new birth physiologically, for the higher and more completely human traits are now born. . . . The functions of every sense undergo reconstruction; and their relation to other psychic functions change. . . . The voice changes, vascular irritability, blushing, and flushing, are increased. Sex asserts its mastery in field after field. There are new repulsions felt toward home and school, and truancy and runaways abound. The social instincts undergo sudden unfoldment, a new love of life awakens. It is the age of sentiment and religion, of rapid fluctuation of mood,



and the world seems strange and new. Interest in adult life and in vocations develops. Youth awakes to a new world, and understands neither it nor himself." The death rate is still low, but greater than in childhood, with tuberculosis by far the most important cause, typhoid fever being second, and organic heart disease and pneumonia third.

Maturity is the sixth period of age, beginning at the end of adolescence and extending to the decline of the

sexual functions, about the forty-fifth year, marked in women by the menopause, and in men less clearly by the diminishing of sexual activity. This is the time of complete functional activity, with psychical and physical powers at their maximum. Tuberculosis causes 35 per cent. of all deaths during this period, with typhoid fever the next important cause of death.

Middle age designates the next period, which is not closely demarcated at either end.

## GENESIS OF LANGUAGE

### I.

Language is much more than speech, it is an integral part of expression. Defects of comprehension are due less to faults of expression in the one than to those of apprehension or appreciation in the other. The impulse to convey meaning may be plain enough; it remains for the parent or nurse to grasp, and to interpret the thought and purpose conceived.

In developing language equal attention should be given to understanding the meanings or intentions which are plainly enough conveyed.

Every organic stimulus is expressed in movement. The infant acquires percepts through the medium of the senses, which, in turn, rise to rudimentary ideas, struggling for expression as the machinery of speech begins to adjust itself for utterance. Dormant motor cells awake to action. Motion tends to larger, clearer, more specialized acts, taking shape in gestures, in combinations of movement leading to language.

Doubtless, when we become wise enough to perceive and interpret the various factors of human expression, there will be made plain many appreciable evidences of intention which will prove instinctively intelligible, and can be reduced to exact formulation.<sup>8</sup>

A watchful, loving mother's consciousness becomes aware of meanings in a multitude of indications designed by the infant to convey its unformed, but often vitally important intentions and desires. In short, she becomes aware of and knows what the baby wishes to convey.

Meanwhile the baby, who is vastly more intelligent than we often give him credit for, soon forms pretty definite concepts of what he wishes to feel, to be, to perceive, to know, to do. Delightful and wonderful are the steps of progress he makes to take mother into his confidence, to persuade her to do, or not to do, as he wishes. The voluntary attempts at articulate speech are thus begun, by cooing, gurgling, and the like.

Poets often contribute to the formation of thought by jingling phrases which—sometimes unfortunately—slide into the mind as truths. When Tennyson tells us of "an infant crying for the light, an infant crying in the night, and with no language but a cry," it is plain

he was neither a mother nor a physician; though he, as well as other poets, is (often erroneously) credited with being a psychologist.

To be sure, the noisiest item of infantile language is the cry, and it is full of meaning for one who is divinely gifted with wise comprehension. This most mothers are, and all could be if they gave the matter adequate attention and reflection.

### II.

Cries infantile may be divided into: shouts, yells, screams, whimpers, whines, wails, bawls, squeals, screeches, squeaks; cries of older children may include these, and also whoops, snarls, grunts, roars, wheezes, sibilations, pipings, and likewise simulations of animal cries. All these vocalizations contain a certain amount of descriptive meaning; moreover, the little one aims to convey his meaning both definitely and forcefully.

Infantile cries contain a significance which a hard-hearted, critical neighbor, or bachelor uncle, fails to appreciate. Few mothers (who deserve the title) are at a loss to interpret them aright, soon or late. Physicians need to understand the variations in cries, for the reason that certain of them are indications of definite disorders.

The cry of discomfort is a pitiful wail, not so feeble as the cry of fretfulness, nor so emphatic as that of pain. The first cry after birth is one of natural discomfort on being removed from a uniform temperature of 98.4° F. to one usually much colder; to a medium (the air) much harsher and unusual to the skin; the coming in contact with coarse materials, cloths, the physician's clumsy fingers, and so on. Also, it is due to a normal spinal and lung reflex of contraction; the muscles of the chest are likewise caused to grow tense, and the air is expelled forcefully through the vocal cords, which share in the tension.

The cry of hunger is another spinal reflex, and resembles that of other discomforts, with the addition of a *crescendo* of impatience, and will often cease at the appearance of food, or its container.

A vague feeling of miserableness, depression, induced by disorder or disease, is voiced by a fretful wail, or whimper, is plaintive, somewhat nasal.

The cry of pain is a loud yell, roar, or scream; is usually short and sharp, and in children of over three

<sup>8</sup> This is now being done by psychologists in the study of monkeys and other animals.



months may be accompanied by tears; the stronger the cry, the severer the pain indicated. Colic is a common cause; so are pins, creases in the clothing, or other hurtful agencies.

A cry suddenly stopped, with repetitions and abrupt cessations, or chokings, usually indicates disease of the lung or pleura.

If the infant cries as if in pain and puts its hand to its ear, suspicion should be directed to disease of the ear.

Hoarse, "croupy" cries indicate disorder in the vocal cords.

The cry of fright is obvious enough, an agitated, sharp scream, a choking whimper, a suppressed wail.

No child cries without a good cause; it is the duty of the mother to give attention carefully and searchingly to interpret the various factors of expression.

## DEVELOPMENT OF THE MIND

### I.

That the mind develops slowly, expanding gradually till the zenith of intellectual power is reached, and then steadily declines, is the common impression. Judging by the results of education, training and specialization, this seems to agree consonant with experience. However, the one reliable basis of information on all questions of human growth is biology, genetics. A close study of everyday experience, free from conjecture, tradition and wishes, reveals the contrary in plain analogies. Development is more rapid at first, and slower later. The law of genetic restriction,<sup>9</sup> as enunciated by Professor Charles Sedgewick Minot, is to the effect that "after a cell has progressed and is differentiated a certain distance, its fate is by so much determined. It may pass on, turn in one direction or another, always progressing, going onward in its cytomorphosis (alteration of cellular states), but the general direction has been prescribed, and the possibilities of that cell, as it progresses in its development, become more and more restricted."

If it be demonstrable that development is at first more rapid and later more slow, we should expect to find graphic evidence in the progress of mental growth; we should expect the infant to develop faster than the child,

It is obvious to the simplest intelligence that to punish an infant or child for crying is barbarous and cruel, an act for which a mother or nurse should be plainly reprimanded. To coddle, to display an excess of tenderness, is equally reprehensible.

As speech evolves, there is great need to guide the enunciation along desirable channels of precision in pronunciation, intonation, choice of words, the exact meanings of words, and the formation of sentences. Bad habits in enunciation formed in childhood tend to become fixed, and sometimes ineradicable. Good habits of speech early established make for rapid, economic advancement in intelligence, in intelligibility, in educability, in charm and efficiency.

the child faster than the young man, and the young man faster than the old man.

Professor Minot presents the following vivid picture (in *Age, Growth and Death*) of development of the infant and child up to the school age.

### II.

"The organs of digestion, circulation, assimilation and excretion are all functionally active at birth. The sense-organs are also able to work. Sense of taste and of smell are doubtfully present. It is maintained that they are already active, but they do not show themselves except in response to very strong stimulation. Almost the only additional faculty which the child has is that of motion, but the motions of the newborn baby are perfectly irregular, accidental, purposeless, except the motions which are connected with the function of sucking. . . . The instinct of sucking the baby does have at birth. It might be described as almost the only equipment beyond the mere physiological working of its various organs. But at one month we find that this uninformed baby has made a series of important discoveries. It has learned that there are sensations, that they are interesting; it will attend to them. You know how a baby of one month will stare; the eyes will be fastened upon some bright and interesting object. At the end of a month the baby shows evidences of having ideas and bringing them into correlation—association, because already after one month, when held in the proper position in the arms, it shows that it expects to be fed. There is, then, already evidence and trace of memory. At two months much more has been achieved. The baby evidently learns to expect things. It expects to be fed at certain times; it has made the great discovery of the existence of time, and of the existence of space, for it will follow, to some extent, the bright light; it will hold its head in a certain position to catch a sound apparently from one side; or to see in a certain direction. The

<sup>9</sup> This "law of genetic restriction" exerts important bearings upon disease. When disease occurs, the cells of the body offer two kinds of spectacles: (1) Sometimes we see that the cells causing the diseased condition are more or less of the sort which naturally belong to the body; that they are present where they do not belong, or they are present where they ought to be, but in excessive quantity. (2) Again, we see that cells really change their character; the young cells are those which change most. A large number of dangerous morbid growths (tumors) arise from cells of the young type, having an extreme power of multiplication, grow rapidly, assume a special character; their genetic restriction has gone so far that all their possibilities of change have become fixed; there is a certain range of possibilities still open to them; they may turn in one direction or another. (C. S. Minot.)



sense of space and time in the baby's mind is, of course, very imperfect at this time, but those two non-stuff realities about which the metaphysicians discuss so much, the two realities of existence which are not material, the baby at this time has discovered. Perhaps, had some great and wonderfully endowed person existed who preserved the memory of his own psychologic history, of his development during babyhood, we should have been spared the gigantic efforts of the metaphysicians to explain how the notions of space and time arose. Without knowing how, the baby has acquired them, and has already become a rudimentary metaphysician. We see, also, at the end of the third month, that the baby has made another remarkable discovery. It has found not merely that its muscles will contract and jerk and throw its parts about, which surely was earlier a great delight to it, but that the muscles can contract in such a way that the movement will be directed; there is a co-ordination of the muscular movements.

"Such is the mere life of vegetation the baby lived during the first two months; no grown person ever experienced such an expansion of life—such a progress from power to power in that length of time.<sup>10</sup> . . . The baby in two months has accomplished an amount of development which no adult is capable of. And now, at three months, we find another great discovery made by the baby, that it is possible to bring the sensations which it receives into combination with the movements which it makes. It learns to co-ordinate its sensory impressions and its motor responses. We hardly realize what a great rôle this adjustment, between what our muscles can do and what our senses tell us, plays in our daily life. It is the fundamental thing in all our daily actions, and though by habit we perform it almost unconsciously, it is a thing most difficult to learn. Yet the baby has acquired the art, though he only gradually gets to be perfect in it. Again, we see, at the end of the fourth month, that the baby begins to show some idea of another great principle—the idea that it can do something. It shows evidence of having purpose in what it does. Its movements are no longer purely accidental. At four months he makes the amazing discovery that the two sides of an object are not separate things, but are parts of the same. When a face, for instance, disappears by a person's turning around, that face, to a baby of one month, probably simply vanishes, ceases to exist, but the baby at four months realizes that the face and the back of the head belong to the same object. He has acquired the idea of objects existing in the world around him. That is an enormous achievement, for this little baby has no instructor; he is finding out these things by his own unaided efforts. Then at five months begins the age of handling, when the baby feels of everything. It feels urgently of all the objects which it can get hold of, and, perhaps, most of all of its own body. It is finding that it can touch its various own

parts, and that when its hands and parts of its own body come in contact it has the double sensations, and learns to bring them together, and thereby is manufacturing in its consciousness the conception of the *ego*, personal, individual existence, another great metaphysical notion. 'I feel, therefore I am.' The first five months constitute the first period of the baby's development. Its powers are formed, and the foundations of knowledge have been laid. The second period is one of amazing research, constant, uninterrupted, untiring; renewed the instant the baby wakes up, and kept up until sleep again overtakes it. In the six months' baby we find already the notion of cause and effect. He is dealing mostly with metaphysical things, getting the fundamental concepts. That there is such an idea of cause and effect in the baby's mind is clearly shown by the progress of its adaptive intelligence. It evidently has now distinct purposes of its own. It shows clearly at this age another thing which plays a constant and important rôle in our daily life. It has the consciousness of the possibilities of human intercourse; it wants human companionship. And with that the baby's equipment to start upon life is pretty well established. It has discovered the material universe in which it lives, the succession of time, the nature of space, cause and effect, its own existence, its ego, and its relationship with other individuals of its own species. Do we get at any time in our life much beyond this? Not very much; we always use these things which we learn in the first six months, as the foundation of all our thought. By eight months the baby is upon the full career of experiment and observation. Everything with which the baby comes in contact interests him. He looks at it, seizes hold of it, tries to pull it to pieces, studies its texture, its tensile strength, and every other quality it possesses. Not satisfied with that, he will turn and apply his tongue to it, putting it in his mouth for the purpose of finding out if it has any taste. In doing this, hour after hour, with unceasing zeal, never interrupted diligence, he rapidly gets acquainted with the world in which he is placed. At the same time, he is making further experiments with his own body. He begins to tumble about; perhaps learns that it is possible to get from one place to another by rolling or creeping, and slowly he discovers the possibility of locomotion, which you know by the end of the year will have so far perfected itself that usually at twelve months the baby can walk. During this period of from five months to twelve the baby is engaged upon a career of original research, unaided by anybody else, getting doubtless a little help; and, of course, a great deal of protection, but really working chiefly by himself. How wonderful it all is! Is any one of us capable of beginning at the moment we wake to carry on a new line of thought, a new series of studies, and to keep it up full swing, with unabated pace, all day long till we drop asleep? Every baby does that every day.

"When we turn to the child who goes to school, behold how much that child has lost. It has difficulties

<sup>10</sup> M. W. Shinn, "The Biography of a Baby."



with learning the alphabet. It struggles slowly through the Latin grammar, painfully with the subject of geometry, and the older it gets the more difficult becomes the achievement of its study. The power of rapid learning, which the baby has, is clearly already lessened."

### III.

The view that the largest potentialities reside in the infantile and childish mind is strengthened by the findings and opinions of Professor Boris Sidis, whose teachings on the subject of educational psychology are original, convincing and of proven efficacy. With the late Professor William James, he was the codiscoverer of the law of latent energy; he is convinced that most of us "live unnecessarily near the surface," and throws the blame for this largely on our educational systems. He particularly condemns the custom of delaying any attempt at formal training for the child until he arrives at what is called the "school age."

"The notion that the young child's mind should be allowed to lie fallow is utterly wrong and pernicious. The child is essentially a thinking animal. No power on earth can keep him from thinking; from using his mind. From the moment his inquiring mind first takes in the details of his surroundings he begins the mental processes which education is intended to guide and develop. He observes, he draws inferences from everything he sees and hears, he seeks to give expression to his thoughts.

"Left to himself, however, he is certain to observe inaccurately and to make erroneous inferences. Unless he is taught how to think, he is sure to think incorrectly, and to acquire wrong thought habits, causing him to form bad judgments respecting matters not only vital to his own welfare, but also important to the welfare of society. In fact, in order to get the best results, his training in the principles of correct thinking should begin as soon as, or even before, he starts to talk. There need be no fear of overtaxing his mind. On the contrary, the effect will be to develop and strengthen it, by accustoming him to make habitual use of the latent energy which most people never use at all."

Here we have set forth convincingly the great principle of *Conservation versus Prodigality*, or wastefulness of budding powers.

Professor Sidis would rely on the educational principle of teaching a child through appealing to his interest, by systematically applying the powerful, but little understood psychologic factor of suggestion, the intrusion of an idea into the mind with tact, skill and power, so that it dominates and for the moment disarms or excludes all other ideas which might interfere with its comprehension; by implanting in the mind ideas which one wishes to render dominant; by arousing curiosity and sustaining interest. This principle can be carried out also through play, games, songs, as exemplified by the kindergarten. Professor Sidis is of the opinion that this may be extended advantageously to subjects far beyond

the kindergarten range, and the child led to undertake and pursue enthusiastically any line of study, if only it is made sufficiently absorbing.

Also, it is entirely practicable to stimulate the child to undertake lines of study to which at first was shown indifference or positive dislike, till the principles can be mastered with ease, and the subject finally continued with enthusiasm. Everything about us is of suggestive value, and can be so directed and controlled as to prove of large educational value.

Everything a child sees or hears, whether he is consciously aware of it or not, leaves a more or less profound impression, is subconsciously remembered, and may at times exercise a determining influence upon the whole course of life.

The method of training the blind and deaf girl, Helen Keller, was upon similar lines. She was able to learn music by placing her hand on a piano and receiving its vibrations. She was thus able to recognize and recall by name music not heard by her since her nineteenth month, and before losing her hearing.

The environment can be so arranged as to cause it to radiate upon a child suggestions which shall quicken and enlarge intellectual capacities.

### IV.

In education one basic principle must govern. The child is far less impressed by specific guidance or instruction than by unconscious absorption. Didactic teachings make little impression, whereas example is all-forceful. When able to read, only partial, fragmentary concepts are formed by interpretations from visualization of printed words. "The child does generally as he sees others do, sometimes as he is bidden, very rarely as he is taught."<sup>11</sup> Pangs of pain from eating green fruit are remembered, and become a part of unconscious selection as no preaching can ever be. The same principle of learning essential things can obtain throughout school, college, and after life.

"Woe betide the child who is brought up according to the parent's understanding of the best, wisest, most sensible and clearly written books. . . . From this soil have sprung up countless fads, varieties, and vexations to spirit and body of the child."<sup>12</sup>

In the domain of conduct we seldom pay attention to principles till we suffer from experiences bringing sharply to our consciousness the need for modifications of impulse. Emerson believed the way to teach was by emphasizing the salient points by concrete instances and cunningly worded phrases, rather than by logical arguments.

In short, in the best interests of the expanding mind, the child gets most, whether of good or of evil, from his domestic environment, the unconsciously exerted impressments of the home atmosphere in the nursery.

<sup>11</sup> Professor John M. Tyler, of Biology, Amherst.

<sup>12</sup> Professor Tyler, *op. cit.*



In thus estimating the power of a child to react to influences of environment we must take into careful consideration his resistances as well as his acceptances, *i.e.*, his reactions. Employing biologic analogies again, "Living beings, while necessarily obedient to the larger laws of nature, strictly conditioned by temperature, gravity, light, and other fundamental phenomena, show, nevertheless, important reactions, responses, movements and other properties through which they actively resist, and may even refuse to obey, the less important calls of environment. As we rise in the scale toward higher plants and higher animals, we find a constantly greater and greater tendency not to yield passively to environment, typified at its best and largest in Tennyson's 'Ulysses,'

'Made weak by time and fate, but strong by will,  
To strive, to seek, to find and not to yield.'

(PROF. WILLIAM T. SEDGWICK, of Biology,  
Mass. Institute of Technology.)

In short, there is no progress by adopting a policy of "*laissez faire*" only by struggle and competition. To let nature have her way wholly would be to revert to savagery, while self-development by acceptance, resistance, or adaptation is all important. There is also required, for intelligent human beings, the encouragement of altruistic interference, or even social regulation.

The police, constabulary, board of health, and other officially constituted dominant protective regulations must be invoked, as well as compulsion from boards of education, to round up truants, dullards, and semi-savage youngsters.

## V.

One principle must govern the foundation of measures for prevention of harm, of individual blunderings, of escaping from right influences and falling into yawning pits of peril, in the application and enforcement of communal economic measures designed to do the utmost

good to the greatest number. In education, personal or parental interest can accomplish only so much. The combined forces and determinations of the community must always be invoked. Hence, while systems of education are necessarily faulty or inadequate, they are absolutely required, and are constantly being improved.

The practical basis on which all laws of human conservation depend in the final count is a working knowledge of the laws of life, growth, change, reproduction. Whatever else is taught, or not taught, children in their earliest years, they should be accurately trained in the science of biology.

Not only every teacher, but every intelligent parent, or person who may become a parent, should be fortified with a fair knowledge of the principles of genetics. When a child becomes in turn a parent, he or she will unconsciously utilize the elementary principles learned from the evolution of the growing plant or animal; will develop the same kind of thinking, feeling, willing and doing; the qualities of patience and fidelity, which he learned of the plant, the chick, the puppy.

Hence the farm again stands as the normal and most desirable place to learn the real lessons of life. No school can compare with it; no teacher can come into competition with this untrammelled supplier of sense impressions, these incomparable opportunities to see, feel, realize the evolution of primitive phenomena of growth and change. A child reared in the country is by that one fact the superior in fundamental factors of knowledge; is the richer for all time in possession of the materials out of which future standards of conduct, of judgment, of beauty, of lofty purpose, are compounded. From these simple, natural sense percepts come the elements of science, of wisdom, of character. Other things may pass away, but sensory images remain to delight, to be reveled in, to comfort, as age slowly draws the veil over dimming powers.

## THE SENSES; PERCEPTION; FEELINGS; EMOTIONS

A normal infant is equipped with boundless capabilities, which would develop anywhere, if supplied with entirely favorable environment, judicious encouragement, and freed from adverse or limiting conditions. In its make-up are the latent forces from all along the ancestral stream of evolutionary influence, good and bad.

Biologists tell us that no one is entirely normal; we are only "relative terata," never perfectible human beings. Any infant whom we can assume to be normal can achieve a high degree of efficiency in proportion as it is supplied with right environment, opportunities and right training.

## I.

The mind and body are intimately allied, are so essentially one that the process of training (conscious or unconscious) must include both. Information comes to

the consciousness through the medium of the body, through the senses. The mind uses the information supplied, interprets it, adopts whatever is available for use. No matter how perfect the bodily parts are in structure, arrangement and functional capacity, there yet must be two factors supplied to render them of use; one is a consciousness capable of interpreting the sensations received; the other, abundant, varied, and harmless sensory stimulations. Knowledge thus consists of percepts received through the senses. Wisdom consists of making right use of these percepts, interpreting them intelligently in their due proportion and associations.

Consciousness is that distinguishing characteristic of mental states which enables us to become aware of them and of physical and mental phenomena; in short, of things, feelings, ideas, influence, occurrences, comparisons, and the like.



All processes that affect and condition consciousness are, from one point of view or another, the subject-matter of psychology. Without a fair comprehension of psychologic principles and laws (from the "Science of the Mind") the mental powers cannot be rightly understood or trained. They are wholly dependent upon the integrity of the nervous system. Without the nervous mechanisms, and kept in good order, accurate perception would be impossible.

Without the nerves to transmit stimuli from within or from without, the senses could not perceive, nor the consciousness be aware, nor the intelligence interpret. Nor, without a nice adjustment of the vital functions of the body, without normality of the cells, structures and organs of the body, could the mind be and remain normal, do its work, act efficiently.

## II.

The highest objects of human life are comprehended in the attainment of happiness and efficiency. The pursuit of each of these is indissolubly bound up in that of the other. The foundation, then, of serviceable living is the perfection of latent capabilities.

Certain facts concerning the workings of the laws of mind must be realized by parents, teachers, and all who exercise control over children. Only the merest sketch of these facts and principles, partial and fragmentary, can be presented here. The most that can be attempted is to call attention to them by inference and appeal.

The most wise and advanced psychologists have demonstrated this much, that in dealing with the problems of education, adjusting the human creature to its complex and confusing environment in adopting measures to enhance and safeguard the budding mentalities from evil influences from within or without, and in overcoming limitations one golden rule must be observed: Adhere to simplest, most common-sense methods of interpretation, explanation, suggestion, and persuasion. Keep clear of preconceived notions. Above all, shun mysticism, symbols, shibboleths, philistinisms—for that way lies confusion, misapprehension, ineradicable damage.

When we meet those admirable individuals, arising in the simplest homes, of sane, wholesome, well-balanced mentality, exerting a force in any community, the explanation is that such a person was blest with a good mother, a wise, simple-minded woman, whose maternal instincts to do, or to let alone, to encourage, to interpret, to suggest, were sound and competent.

Great men and splendid women have, since the dawn of history, emerged from time to time from widely divergent homes, from antipodal planes of culture and religious belief. The explanation of the processes by which these personalities have evolved will, in the final count, be found to lie in the conservation of latent energies by a mother divinely endowed with robust common sense.

## III.

We would advise those who desire to know how best to conserve and enhance the infantile and childish mind to inform themselves on the normal processes, laws, variants, of the brain and central nervous system, and to become founded in the principles of sensory and motor training.

No one of the senses can be neglected. Some are responsive to stimulation more from one source, some from another. In obtaining primary percepts the eye may come first, the ear second, with touch and taste second to neither. Yet, sometimes the eye can see plainly, while the consciousness cannot interpret until reinforced by the ear, or touch, or odor, or taste.

It is well to note that originally the senses were assumed to be five in number, now psychologists recognize eighteen. Crude sense impression is not adequate for the supply of higher refinements in perception. Individuals vary in their responsiveness to stimulation through one or other sensory avenue. Some are eye-minded, others ear-minded, or touch-minded, or combinations of one or two are found.

"For untold barbaric ages, man has attained, through the medium of the ear, almost all the knowledge that came to him at second-hand . . . many visualists can construct a more vivid picture if the elements are given them through the ear, rather than through the eye" (R. P. Halleck).

The brain is subject to modification by each of the senses. Youthful nerve-cells are easily modified by training, but older ones increasingly less so. It is always too late to be what you might have been. The plasticity of nerve-cells is inversely proportionate to their age.

No one can ever become an approximation to what he was capable of being, unless the best sensory and motor training has been supplied in early life, and was thorough in fundamentals.

"The normal man is one who can form definite images from all the senses; who can recall almost equally well the odor, color and touch of a rose, the taste of a whipped custard, as well as the sound made in beating it" (Binet).

Master minds are exhibits of capacity for perceiving from diverse sources, more especially from some, and to interpret clearly and forcefully those percepts which attract them most keenly. Moreover, the chief store of percepts must be laid up in childhood . . . all later ones are inaccurate, unclear, not fit to pass on to others till revised.

Hence the first and greatest educator is nature; the best teaching principle is to encourage observation of natural phenomena. Without a solid foundation here, all later deductions of art, science or philosophy are not to be depended on, or accepted. Interpretation, moreover, is of equal import with observation. "Eyes and no eyes" must be supplemented by sound deduction, intelligent inference and instruction.



## EMOTIVE PROCESSES

The emotions play a master rôle in the evolution of the conscious life of infants and children. The complex of agreeable and disagreeable states of any complete mental state we may call an emotion.

### I.

Feeling is the simple agreeable or disagreeable side of any mental activity; is a simple, primitive mental state, just as is a sensation. We begin to feel when we begin to live. An emotion, like a perception, is a more complete mental state, presupposes a representative idea to guide or prolong it. By a combination of feeling-tones is emotion built up. Stimulation through the sense-organs reacts upon the body, producing ideas which, in turn, give rise to emotions. These, again, induce mental complexes (compound forces and modifications of forces) and motor acts. We read the play of emotions upon the countenance, and in the motions, in short, the expression. The sensational factor brings about states of knowledge; that of feeling leads to emotion. Feelings vary in quality, in intensity, and in accord with changing bodily states or ideas, and are reversible. If the emotions are controllable, the organization is sound; if they overflow readily and excessively, the neurotic balance is unstable. If a thing touches our feelings it is able to interest us; if not, it is unheeded. The elevating emotions are constructive; they aid in our achieving efficiency, variety, charm, contentment. The depressing emotions, if long continued, are damaging, destructive, lead to dissatisfaction, despair.

Primitive feelings induce primitive emotions. In the infant these are both extremely simple, yet grow rapidly more and more complex, are influenced by changing environment and multiplying experiences.

The elevating emotions, such as affections, should be encouraged; the depressing emotions, such as fear, self-pity, should be discouraged, repressed, or preferably, diverted and substituted by other and better ones.

All emotions deepen by repetition, and fade away by diverting attention or by judicious suppression. Clear standards of conduct should be formulated and applied by parents, from earliest manifestations of emotion. The method of procedure is by judicious encouragement of right feelings and emotions, and a firm discouragement of fear, anger, discontent, etc.

### II.

One object should never be lost sight of for a moment: the achievement of self-control. Upon self-control depends often the safety of the body, the mind, or the career. "Refuse to express a passion and it dies." A cheerful air assumed will react upon the feelings and produce actual happiness.

It is now known that intensive emotion brings about cellular changes in those highly sensitive regulative centers, notably the thyro-parathyroid apparatus, which can

be demonstrated. If these effects go too far, or are overprolonged, permanent damage ensues. Hence it is not only dangerous to undergo intense emotion or aggravated, prolonged, emotional strains, but it may damage the vital rhythms beyond repair.

Unstable minds and nervous systems are evidenced by emotional imbalance. To deal with this emotional disequilibrium requires wholesome appreciation of the facts, the use of common-sense methods, and is vastly fortified by a fair knowledge of the laws of mental procedures, normal and morbid.

Rewards and punishments must be absolutely just. Not only is the child seriously damaged by displays of unreasonableness or fretfulness in the parent, but is often an unerring judge of adult conduct and fitness for authority. Parental influences are readily jeopardized, often irretrievably lost, by exhibitions of incompetence or loss of poise through acts of hasty folly.

Alert perceptive faculties are required to gain success and happiness. The conscious life of the young is made up of percepts, things perceived through the senses. Hence the need for normality in the sensory domain, integrity of the avenues of sensation, and for abundant and varied opportunities for acquiring experiences. Youth is pre-eminently the time for cultivation of the faculties; after twenty years this is scarcely possible. No life can be as full or complete as it should be which has not been provided with plentiful occasions to drink in wholesome and also to experience other impressions. The best groundwork for achieving fundamental impressions is to live in the simpler surroundings of the country, among the everchanging aspects of nature, unmarred by limitations and confusions induced by civilization, sophistication.

"And Nature, the good old nurse,  
Took the child upon her knee,  
Saying, 'Here is a storybook  
The Father has written for thee.'  
(LONGFELLOW, "Appreciation of Agassiz.")

All great men are equipped with keen perceptive faculties; provided with a large fund of sense-impressions. The whole store must be laid up in childhood and youth, elaborated by trained habits of clear observation and intelligent interpretation.

### III.

Attention must be cultivated, concentration of the mind on sense-perceptions; hence follows deduction from what is perceived by association of the elements of a concept, and conclusions are reached. Memory comes by use, by bringing the impressions, percepts, up to the consciousness. Hence by comparisons and associations arise ideas or images, the basis for right thinking.

Self-consciousness is different from consciousness. It involves a realization of who and what we are, as contrasted with a consciousness of the things which are



around us, wherefrom influences come to us, through the senses, and how they affect us, our consciousness. Self-consciousness may readily become exaggerated; one's own hopes, fears, mental pictures of other people and things, are distinct only when well directed, unconfused. The moment one becomes hyperconscious of one's self and refers external happenings to one's own personality, distorted images will arise, disproportionate relationships, misinterpretations, errors.

The power of decision must be acquired early. Deliberation is needed for the hair-trigger type, but most children need urging to make prompt, reliable decisions, by which they can abide.

A child needs plenty of varied experiences, especially with other children. Protection from emotional irritation may go too far. Hot temper is bad, but not so bad as nursing a grudge, which may grow into persecutory ideas or paranoid states.

#### IV.

The attitude of the mind is subjective when taking notice of itself; is objective when observing the things about us. Mental objects can be known by no sensory mediation; there is no touch, no sound, no taste, no odor, whereby we formulate mental objects in thought. The body, with its workings, has a minor part in consciousness, is a basis or container of kinesthetic processes.

Definitions are impossible except as pictures, symbols. We are aware of streams of ideas, of impulses, of feelings, by introspection. We can observe how they are related to us and each other, and to things outside; we can note combinations, formulate laws. A mental object can be arranged, even completed, wholly within the consciousness, which can then, by will-power, be projected outward. Motor power and machinery can thereupon be employed and the object realized. For example, we can form a picture in the mind and by volition, and by means of our hand, paints and canvas, make the conceived picture an actuality.

Enough has been indicated to show how plain and simple in essence are the processes of the childish mind and how elastic they can be made to become through right opportunities, right guidance, and judicious cultivation. A child can do a good deal of thinking without guidance, if only the conditions for cultivation of the sense-perceptions are provided. Also, it should be protected from intensive or protracted neglect, wrong guidance or interference.

To enter more elaborately into the introspective domain of psychology, the intellectual, moral and volitional processes would occupy too much space, and they can be learned from anyone of many excellent sources, the best of which is a good teacher of psychology.

## TRAINING OF THE MOVEMENTS

### (Motor Education)

Opportunity is too often regarded by parents and educators as the equivalent of training. Confident assertions are made to the effect that enforced educative measures for the very young child make for harm, and that spontaneity can be depended upon to direct and sustain impulse. This would be true, perhaps, if parental wisdom could be relied on to provide thoroughly wholesome environment, normal suggestion and stimulus to varied activities.

#### I.

It is a fundamental truth that conservation of normal impulses to do or not to do, is essential to the evolution of inherent powers. The only way this can be applied is to encourage, direct, and train the genesis of impulse. Also, this must be done from the earliest moment that consciousness is capable of accepting suggestion. The infant must be self-developed. Everything that the infant tries to do is a part of the innate necessities of growth, the imperative principles of progress. Every effort to touch, to handle, to move, kick, taste, see, must be encouraged, always with intelligent guidance. So also of the more definitely purposive acts; as these become more complex they should be given free scope and never checked, save when danger threatens. It is a fundamental error to compel any child to "sit still and

be good." Checking impulses invariably produces damage in mind, disposition, and motor competence.

Dullness, helplessness, fear, cowardice, are thus produced by interference with initiative.

Rewards and approbation should be freely given for acts well done, observations well made. There then develop confidence, energy, vigor, effectiveness; thus also comes before one is aware of it, capacities for self-control, caution, capability for responsibilities. Liberty is, of course, not license. Inclinations are right, and should be followed so far as is possible or permissible, compatible with safety to self and the common good. Compulsion to do that which is not desired is hurtful. As reason grows direction will be welcomed, persuasion will readily prevent any objectionable acts, and right impulses and behavior will gradually develop.

#### II.

Unfortunately, children are compelled to adapt themselves to diversities in environment which, in comparison to that of most domestic animals, is profoundly to their disadvantage.

Many human mothers are supplied with reliable instincts and solicitudes. The exigencies of city life tend overwhelmingly to vitiate primitive impulses, to sub-



ordinate such desires and capacities as make for development of the home; to change the nest or the hearthstone into a mere abiding-place, whence the least as well as the greatest must fare forth to earn money. The best education is supplied in an ideal home, or howsoever humble a basis, as that of the pioneer, the outdoor laborer, the small farmer. Here there is a constant supply of normal stimuli to action, made convenient and necessary by communal interests. Each one, to the youngest child, is called upon to do such things as lie within its capabilities, thus contributing proportionally to the common welfare. This, in its better aspects, cannot be surpassed as an educative groundwork. The poorer city dweller, subsisting on ready-made foods and with no outdoor but the street, finds no scope for the primitive actions of digging, chopping wood, carrying water, hence cannot develop symmetrically. Even among the well-to-do things are little better. The street, with its many perils from "devil wagons," trolley-cars, and the like, is becoming more and more unfit for a playground. The schoolhouse yards or roofs sometimes provide space wherein the scholars can give vent to motor impulses, but at best, these are wholly inadequate. Even the very rich city dweller is poor in opportunities in comparison with the country child, who has access to a bit of woodland and a farm yard.

All children, especially those of the city, require not only ample opportunities to expand and develop, especially by impulsive outlets, as in plays and games, but also specific motor training to correct the perpetual tendency to minor deformities.

### III.

The most thorough method of acquiring both mental and physical efficiency is by systematic motor education. We may then outline how this can best be achieved. Always the play-impulse should be encouraged. Varied and primitive industries, such as school gardening, vacant lot cultivation—or one's own plot of ground—afford incomparable opportunities for conservative mental and physical energizing. Amusement games alone, however, often lead to spiritlessness, impassivity, aimlessness, at best but negative qualities. Competitive games accomplish much more where there are able leaders to animate and direct action. The most educative factor is to stimulate the motor centers by enforcing precision of movement. A few exact movements conscientiously performed accomplish much more for accurate co-ordination than hours of listless, half-hearted movements. Routine, monotony, repetitions, weary minds and fatigue bodies, especially if indoors. Always it is the degree of spontaneity, the heartiness of response, the candor of co-operation, which make for progressive invigoration.

Hence the ideal educational agency, not only of gross motion, but of those modifications of motion, reaction-times, accuracy in eye, ear, voice, decisions, and the like,

is the game of ball and bat, or minicries of chase and war, and such spontaneous impulses to do, to fight, to achieve. All exercises of quickness and precision are exhaustive; hence they cannot, or should not, be unduly prolonged for the very young.

Always the left hand should be trained equally with the right. There is too much one-sidedness in any game played chiefly with one hand.

### IV.

In appraising any plan of education we should keep always before us the objects to be attained. However useful the acquisition of knowledge, expertness, rules, principles, and such may be, most, if not all our daily behavior is regulated by habits. The habitual processes, both mental and physical, become so strong that they dominate not only the individual throughout life, but also nations and races. Habits formed during one epoch impress the citizen maturing in that epoch. Another epoch and different groups of impressions alter points of view and of action.

Habits are motor modifications in nerve substance, which gradually become stable and accurate through repetition of acts, whereby they grow more easy of performance. Memory is chiefly the product of countless actions which have been performed many times before. We remember most easily sense-impressions most frequently received, or acts most often performed. Thus many neglected nerve-paths are developed in brain-cells or fibers; also, shorter and easier routes are acquired, through connecting or associated structures. Thus habit constitutes organic memory (kinesthesia), which may, or may not, be accompanied by active consciousness. Habits may be good or bad.

It is obvious that this store of working habits, mental and physical automatisms, must be acquired as early and as correctly as possible, so that the essentials of education shall be abundant, varied and precise; and that we may combine and elaborate them as we grow in age and facility. When the time comes to specialize in any direction we have need for an equipment in all the simpler automatisms, so that we may group them unhesitatingly to form the basis of our later adaptations.

It is in the last degree unfortunate if our early habits, dynamic associations, are not sufficiently varied and exact to confidently assume precision in responses when we need them as conditions for those specializations which later constitute our life-work.

Right habit formation is based on right guiding in motor impulses, and is essential to right thinking. New paths must be plowed out in motor soil, old paths revised; thus facility is restored and enhanced. Nor should any habit be permitted to become fixed. Capacity for variation is priceless; thus new and shorter routes can be travelled in the brain. When this capability is gone, then is the organism a derelict indeed.



## V.

To attain useful facilities in any line of human endeavor the training of the senses should be systematically pursued from the earliest manifestations of attention. Sense perception opens up the way to form concepts of objects, but is of use only when supplemented by motor impulse. Every normal sense impression tends to pass into movement, and is of use in so far as it does so; in short, conditions for motor development depend upon sensory impulses.

Mental visualization, interpretations of images, concepts of form, can arise only through motor outflows. Ideas are of potency in proportion as they include the elements of motion, the impulse to do.

Thought is a word much in use, but the act of thinking is by no means a constant process, even with the most intelligent. Much of what is called thought is, in most instances, merely automatic action aroused by some sensory impulse. To think deeply, to exert intellectual force, is rarely needed in the day's work; but every human being has constant need of myriad automatisms, the product of early and varied associations of sense impressions along with muscular acts. The product of these is the idea, the memory image. When rightly formed, full reactions between observations and applications, they become unerring guides to conduct. They serve most of life's purposes and are absolutely essential, and become, in the main, dependable. Promptings must, of course, be incessantly modified by intelligent inhibition, the checking of overaction, judicious selection of courses of action. The thing to be desired is balance between determination and execution.

## VI.

A large proportion of the benefits derivable from any kind of graded motor training depends for its chief efficacy upon tranquilizing effects on mental turmoil. Exercise is almost universally conceived to be strenuous muscle-making, which, valuable as it is, may readily exhaust and harm, especially when not wisely directed. Perhaps in time mankind will learn that exercise is a normal and needed use of motor machinery, developmental, educational, preparative.

The whole category of competitive exercises is, in reality, calculated to induce endurance, superiority, the factors of which are poise, elasticity of tissue, and absolute control of every volitional act.

Whatever the direction which life-work may take, that child is especially fortunate who is compelled to acquire a store of motor reactions long before the reasons for them are understood. This essential equipment is to be secured only during the period of elasticity, pliability, while the tissues, brain-cells, nervous mechanisms, etc., are elastic, impressionable. After this period, which slowly subsides, passing gradually into varying degrees of adaptability, the formation of new, yet efficient automatisms, becomes increasingly difficult.

Attention is tension in nerve-cells. Neurons, which at any time furnish a physical basis for varying attention, are subject to a thrilling vibration or quivering. There is voluntary and involuntary, or reflex, attention. Reflex attention is forced upon consciousness by external stimuli. These react upon visual, auditory, olfactory, or tactile centers, and compel attention against the will.

## VII.

Voluntary attention is correlated with heightened activity in cortical brain areas. Anxieties increase morbid hypersensitiveness, and the whole makes for agitation, even turmoil, in the motor spheres. Tense voluntary attention, long continued, will weary the strongest brain. Protracted overstimulation induces exhaustion in brain-cells, till they shrink and become impaired. Muscular energy is so closely associated with integrity of neurons that all influences affecting them become of extreme significance, whether bearing upon mental or physical competency.

Sensations incite to action, and in terms of the original capacity and the subsequent habituation of motor paths and centers. Unless proper association fibers in the brain are developed by suitable nutrition, orderly adjustments, varieties of experience and right training, there must result both motor and sensory, and hence intellectual, limitations. Sensation tends always to pass into movement. If there be no image there will be no concept, and no concept can be formed without an accompanying motor outflow.

Ideas differ in the proportion in which the motor factor stands to the other elements. In some persons ideas spring to life in profusion, in perfection, and instantaneously; others require much time, and then ideation is often unclear. Training can do much to enhance or retard. Interferences with normal ideation are induced by volitional insults, by inhibitions, counter-influences. Many of these adverse influences are the product of doubts, indecisions, disappointments, fears. Pent-up motor energies are thwarted, hence result psychomotor overtensions.

## VIII.

Motion alone produces, achieves; hence the importance of training to conserve motor energies. If defects are observed in method, there is a need for retraining to enhance efficiency. Energies must be directed to definite ends. An idea is barren unless executed in some concrete fashion. Interruptions of ideas may be useful if the flow is directed into useful channels; if merely inhibited, they die; if suppressed, confusion results.

A reflex movement in neurons lies at the basis of every higher act of volition. The idea of an act tends to indicate movement. The consciousness may form a concept of the consequences of the act and check it. This second idea may suggest a modification of the act, or an opposite one. That which modifies the will is usually anxiety. Fatigue may inhibit; nothing is so exhausting



as long-protracted attention. Doubts, indecision, blunders are thus induced. Exhaustion follows; permanent scars are created on vital centers.

Oscillations are peculiar to the realm of feeling, usually dependent on changes in the somatic realm (body cells), and modified by accidental factors—environment, dominating stimuli from without or from within.

Determinants of conduct are moods, emotions, feeling-tones. They, in turn, influence beliefs and likewise somatic states. The most forceful, the most prevalent modifier of decision is some form or degree of fear, anxiety, apprehension. Then are cells, tissues, secretions, and, above all, centers, affected—oftentimes seriously, and organic damage may result.

### IX.

The power of idea, reason, choice, is limited; that of indirect, accidental influences tremendous. Even faith

must not be too blind. Bad habits of mind and body evolve chiefly from indecision, apprehension, fear; seldom from overconfidence or aggressiveness. Few of those who seek or need medical advice are free from some degree or form of anxiety neurosis. Only among the acute diseases can we feel confident that this feature is absent; even here it may occur and modify vital processes. Hypertension of mind and body is a source of much impairment.

The factors include variations in feeling-tones beyond normal or customary limits, in intensity, in periodicity, in slight disintegrations of mental phenomena, commotions in somatic (body) processes, unusual reaction to stimuli, aberrant impressions. Some element of apprehension is usually present, often coupled with heroic endurance. In eccentricities of belief the emotions are thrown just a little out of gear, inducing disarrangements in the motor sphere.

## CAUSES OF SUDDEN DEATH IN INFANTS AND CHILDREN

The causes of sudden death are so numerous and often so obscure that they deserve to be formulated for the use of both physicians and families. When understood and described they form a picture which should be held in mind to assist mothers, nurses, and others in realizing the nature and sources of the danger, hence to encourage the use of all conservative measures. Holt has presented an outline which is here condensed:—

Some of the factors of fatality are wholly non-preventable; others are so difficult of recognition that no one can be blamed for overlooking them; yet others are obscure, but might be forefended if full opportunities were permitted the physician for frequent examinations and the consistent use of precautionary measures.

1. *Malformations*, developmental anomalies, as of the heart, lungs, kidneys, stomach, intestines; sometimes from diaphragmatic or umbilical hernia.

2. *Internal Hemorrhage*.—Limited chiefly to the first two weeks of life, rupture of some subperitoneal vessel causing hemorrhage into the general abdominal canals, or into the meninges.

3. *Asphyxia from Overlying*.—Not common except among the poorer classes, and when the infant sleeps in the same bed with the parents, who may be sodden with fatigue or alcohol.

4. *Asphyxia from Aspiration of Food Into the Larynx or Trachea*.—Regurgitation of food during sleep, or in the act of vomiting, in young infants or weaklings. Vomiting while crying may result in a sudden indrawing of food with the breath, especially while the infant lies on its back.

5. *Enlarged Thymus Gland*.—This condition is not so rare as it is misunderstood; usually occurring in infants, but also in children up to five years of age. An

infant or child may be suffering from some minor illness, when suddenly asphyxia or convulsions set in, with alarming symptoms, or, possibly death, which may be the result of the use of an anesthetic, especially chloroform. At autopsy there is often revealed an enlarged thymus or general lymphatosis, called *status lymphaticus*.

6. *Atelectasis*.—Pulmonary collapse with failure of the vessels to admit air; usually the fetal variety, though it may be of the acquired form in older children, as from compression due to pleuritic effusion (the most common form), or to pneumothorax, enlarged heart, deformities of the chest from rickets, or Pott's disease, tumors of the mediastinum or thoracic walls. Lungs so compressed suffer changes, rendering their expansion difficult or impossible.

7. *Marasmus*.—A general term to cover effects of agencies inducing a gradual deterioration of mental and physical forces, with marked emaciation; the "wasting condition" of infants. The underlying cause is to be attributed to depression of, or developmental faults in, the thyro-parathyroid apparatus, the autoprotective mechanisms. Many exciting causes may superinduce death in marantic states, as marked lowering of the temperature.

8. *Convulsions in Infants and Children Previously Showing No Special Signs of Disease*.—Many of these cases occur in those who were rachitic; some are associated with status lymphaticus, others are manifestations of tetany; cerebral hemorrhage is rare; spasm of the glottis may be a cause.

9. *Asphyxia in Older Infants and Young Children*.—Asphyxia may be induced by pressure of retropharyngeal abscess on the larynx or trachea; or by the rupture of such an abscess into the air-passages. Pressure upon the pneumogastric nerve, leading to fatal asphyxia, may be

due to tuberculous bronchial nodes, or to abscesses in the posterior mediastinum connected with caries of the spine. Dislocation of the upper cervical vertebræ may cause death in cases of spinal caries.

In children of from two to five years, fatal asphyxia may follow ulceration of tuberculous lymph-nodes and the outpouring of cheesy masses into trachea or primary bronchi.

10. *Death After a Few Hours' Illness in which the Chief Symptom Is High Temperature.*—Fatalities in

infants apparently sound not seldom occur upon a sudden prostration with high temperature running up to 106° or 107° F.; convulsions may be a phenomenon. The demonstrable cause may be septicemia, most often from the pneumococcus, streptococcus, or other organisms. In older children the cause may be malignant scarlatina or epidemic meningitis.

The suddenly fatal effects of heart-failure after diphtheria, or after pleurisy with effusion, or in myocarditis, are also well known to be non-preventable.







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