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Notes and Digests. Notes on Studies of the Language of Children

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NOTES AND DIGESTS.

NOTES ON STUDIES OF THE LANGUAGE OF CHILDREN.

A new pulse of family interest accompanies a child's first efforts at speech,—and naturally so, for he then becomes more genuinely human than before in entering upon a characteristically human accomplishment. This family interest and the desire that the child should speak early and be facile of tongue is reflected in folk-lore. (Vide Ploss; *Das Kind*, II, 206, 286). Children that do not yet speak must not, in Prussia, kiss each other, because they will be slow in learning to speak; in Bohemia the nursing child and his mother must not eat fish or the child will long be as dumb as a fish; a German baby will stutter if the soles of its feet are tickled, and an Italian baby, if he is not given a drink out of a bell when first weaned.

Not less than this pre-scientific family interest is the interest of psychology, physiology, philology, and pedagogy. How does mind begin? How does the complicated brain, nerve and muscle apparatus of speech come into adjustment? How does the physical mechanism influence the growth of language in general, and how did language begin? How is the child able to learn in its first three years such an enormous amount? These difficult problems and others wait upon the study of child-language for a partial solution at least. Careful and adequate observation has for the most part been made by scientific men upon their own children, and that mostly within the last 15 years. From the enlistment of trained women as observers, and the utilization of asylum children much is yet to be hoped. By far the most important of the studies thus far, both in exactness and extent, is that of Preyer in his *Die Seele des Kindes*.¹

By way of introduction to his observations upon his child, the author traces a close parallel between the defects of language resulting from brain disease in adults and the similar defects from as yet imperfect brain development in the child. Such a parallel, at least in its larger aspects, is both true and instructive.

In its broad outlines the progress of the child in his mastery of his mother tongue may be briefly sketched. It is a resultant of the condition of his speech mechanism, cerebral and muscular, of his intellectual development, and of what he hears from his parents. The baby's first screams are reflex and of no more language value than the closure of its hand upon a pencil put into it, or the cries of new born animals. Very early the crying is different according to the different kind of discomfort experienced. Later comes the babbling stage in which sounds are produced simply as so much exercise of the vocal muscles, pleasantly associated with auditory sensations. These begin with the vowels and easier consonants and progress by degrees to the more difficult ones, though this rule is not absolute, as Preyer shows. At this time the baby probably pronounces in play many or all of the sounds that he will later use in speaking and others besides, e. g., a German child uses the English *th*. He cannot, however, repeat even the easiest sounds after another person, and has to re-learn many of

¹ The translation of this work is from the second German edition. A third German edition has recently appeared, in which a number of changes by way of omission and addition are made. A chronological view of the more important signs of development has been added; also an index. The appendices and many new items have been embodied in the text, and the section on diseases of language has been brought up to date. The general plan of the work, however, remains unchanged.

them with difficulty, when he later actually learns to speak. At this time he shows understanding of certain words by his actions when they are spoken to him, and still earlier has well understood, and even made use of, speech music and inflection as signs of emotion, and the language of gesture. By degrees from this babbled stream of syllables are selected by the child certain easy ones in imitation and as it were by tacit convention with his parents and nurses, to serve as the signs of things, especially of food and the persons most seen. These first words are of wide generality, *papa* being applied to all men and *mama* to all women; and only by degrees are these narrowed down to mean the parents. At the same time imitative speech appears; the child tries to imitate not only the speech of its parents, hitting particularly the last syllables, but also the cries of animals and the sound of steam whistles and the like. In this way it secures a number of onomatopoeic words. The first parts of speech are nouns, verbs in the infinitive and imperative, and adjectives; pronouns, adverbs and prepositions are later. It would be difficult, however, to specify in some cases what parts of speech the first words really are, for they stand for whole phrases or sentences. From these stages the child progresses very rapidly during the second and the third year to a command of language, that makes full study extremely difficult. For the detail of these stages and for a guide as to what to look for in new observations on child language the reader can be referred to no better work than this of Preyer's.

This author answers with an emphatic affirmative, the question, whether or not thought is possible without words; but words once acquired furnish an important stimulus to further thought.

In an appendix entitled "Comparative Observations Concerning the Acquisition of Speech by German and Foreign Children," Preyer summarizes with comment most of the literature on the subject at that time (1884) accessible, (Sigismund, Löbisch, Taine, Wyman, Strümpell, Darwin, Vierordt, Schultze, Lindner, Haldemann, Holden, Humphreys, and others), and adds besides unpublished observations that have been communicated to him by others. The English reader may be referred to these summaries in the translation.

The chapter on Expression and Language in Perez's *First Three Years of Childhood*, contains some observations of the author, but less methodical, and, in comparison with Preyer's, merely casual. He brings out, however, in the general treatment that he accords the subject many interesting suggestions.

The papers of Taine and Darwin in the volume of *Mind* for 1877 were followed in the same periodical by those of Pollock (vol. III, 392) and Champney's (vol. VI, 104); the first, a rather full account of the speech of a child from its twelfth to its twenty-third month; the second, a very brief note upon a younger child. In the English Illustrated Magazine for 1884, under the title of "Baby Linguistics," Sully gives an entertaining account of the speech experiences of a young friend of his, from observations by the child's father. The account is fullest for the period between the sixteenth and twenty-fourth month.

Besides the studies so far mentioned, which deal chiefly with the child's ability to pronounce, use and understand words, a few others have been made with a view to getting at the number of words which a child at a given age has independently at command. Of this class are the observations of Holden, (*Transactions of the American Philological Association*, 1877, pp. 58-68) and of Humphrey's (*Ibid.*, 1880, xi, pp. 6-17). Holden fixed his own vocabulary after a careful estimate, at from 33,000 to 34,000 words, and that of an average grown person at 25,000. From very careful observations (made by himself in two cases and by a friend in a third case), excluding all doubtful words, and all not spontaneously used, the vocabularies of three children numbered 483, 509, 173.

respectively. The order of parts of speech being: nouns, verbs, adjectives, adverbs, other parts of speech, the last group exceeding the adverbs in two cases. The first two of these were girls. A son of Holden's, not included above, used at 24 months, as the author informed Preyer, about 397 words. Holden is convinced that difficulty of pronunciation rather than difficulty of comprehension is the important factor in determining whether a given word will appear in a child's vocabulary. The number of words understood by the first child, over and above the 483 used, is estimated at 1000.

Humphrey's little girl had a vocabulary of 1121 words. The order of frequency was as above as far as the adverbs; then followed: pronouns, prepositions, interjections and conjunctions. The child seems to have been precocious in imitating speech and early to have made some progress in naming things; at a later period, however, she learned slowly and with evident effort. The author gives considerable attention to the changes suffered by the words that the child found difficult to pronounce.

A number of vocabularies used by children from the fifteenth month to the fifth year have been collected by J. M. Greenwood, and are printed in his *Report as Supt. of the Kansas City Public Schools for the year 1887-88*, p. 52-65. The only vocabulary in which pronunciation is indicated is the first, containing 80 words used in her 17th month by a little girl. Another little girl at 15 months used 60 words; at two years she used 500. A third little girl at two years and a half used 1050; but this includes such words as "must" and "mustn't," "sing" and "sang," etc., as separate words. A boy at three years and five months used in one month 837 words; in two weeks at three years and nine months he used 172 new words. The oldest child reported upon was a boy of five years. His vocabulary, as taken down by his mother in two weeks, was of considerably over 1600 words, but this includes some repetitions. All the lists include proper names in greater or less number. How much care was exercised in taking them down and how accurate were the observers cannot be inferred from the brief notes appended by the collector. One or two of the lists in themselves suggest less than sufficient exactness. Two baby vocabularies have been placed in the hands of the writer of this note by his friends. One is a list of 185 words, including 13 proper names, used voluntarily and with understanding by a little girl of 21 months; the other a partial list rapidly taken down from the conversation of another little girl of about the same age. This second list contains over 400 words and is known to fall very far short of the number in use at the time. The size of the vocabulary at a given age will of course vary considerably from child to child; and its composition, after the stock words of the nursery and household, will often show, by a strange word or two, as Preyer notes, the business of the father or the peculiarities of the child's own experience.

With these vocabulary studies may be mentioned that of Dr. H. K. Wolfe on "The Color Vocabulary of Children," (*University Studies*, published by the University of Neb., Vol. I, No. 3, July 1890), though the age of the children examined is greater—from 5 to 17 years and over. The author finds the conditions that fix the extent and accuracy of the vocabulary corresponding to any special sense "in the delicacy of the discriminative power and the need for expressing small degrees of difference." Preyer's child at 20 months knew no color names; at 25 months he had been taught to name red and green correctly when only those two were shown; at 34 months he named yellow, brown, red, violet and black with considerable certainty, but green and blue with relatively little, a result which Wolfe thinks due in a measure to the order in which the child was taught the colors. In two of the three vocabula-

ries given by Holden no color words occur; in the third only black and white.¹

Dr Wolfe's own observations were made in the course of an examination of the color sense of the public school children in Lincoln, Neb., in which schools there is practically no training in matters of color whatever. Small cards painted in the colors to be tested were shown singly to the children with the question: What color is that? The answers received were noted down and later treated statistically. The answers of children with defective color vision are of course kept separate. The author's full tables show among other things the following: white, black and red are generally correctly named, then follow blue, yellow, green, pink, orange and violet. Girls at 8 years old name the colors about as well as boys of 16. Of other colors tried brown was readily named; drab, gray, purple, lilac, crimson and scarlet poorly. It is surprising that any children not defective in color vision should make mistakes in naming black and white, and should give for such a color as yellow the names green, blue and pink which are typical of the errors to be found in the tables. This the author explains as follows: "The fault does not lie in the ability to discriminate present sensations. It exists rather in the process of association. The bond of association between sensation and name is so weak that the former fails to call up the latter. Hence also the false name fails to recall its corresponding sensation; thus the only opportunity for correction is wanting."

The children with defective color vision made more errors of course than the rest, but on the other hand they succeeded well enough to emphasize the caution insisted upon by those that have before tested for color-blindness, namely, that no test is reliable in which colors are to be named instead of matched. For much that cannot well be summarized here, both of detail and of incidental interest to pedagogy and psychology, the original must be consulted. It is almost certain that a census of the adult public would show results not very unlike those for the older children; which indeed would only prove yet more clearly the need of some color training in the schools. If exact discrimination and classification are as important a characteristic of the trained mind as they are assumed to be, it would seem that a notable opportunity for practice in this direction has been allowed to go to waste.

E. C. SANFORD.

Die Stipendien und Stiftungen, Convicte, Freitische, Etc., an allen Universitäten des deutschen Reichs. DR. MAX BAUMGART. Berlin, 1885, pp. 760.

Each scholarship, fellowship, stipend, free table, provision for remission of fees, with the statutes enacted for the more important ones, and conditions for applying for them are brought together here for the first time, and constitute very curious and interesting reading. Thousands of students are benefitted by them each year, and are more and more influenced in their choice of an university by these. After once acquiring academic citizenship the first care of many students is to study the conditions of receiving these benefices, not a few of which are competitive. This book is therefore in part intended for the libraries of gymnasia and real schools. Having received a particular stipend the student is advised to study its statute and the will of its founder, and to work him-

¹ An examination of the vocabularies given by Greenwood and the two in my possession shows considerable difference in children in this matter. Greenwood's, on a hasty reading over, gives results as follows (indicating the children by their ages): 17 months, 0; 24 months, blue, red, white, black, (the same child at 15 months in a vocabulary of 60 words had none for color); 30 months, black, blue, brown, green, pink, red, white; 3 years and 5 months, red, black, blue, white, green, yellow; 5 years, red, blue, white, green, yellow, black. In the first of the vocabularies which I have in my possession there is no color word; in the second only white.

self so far as possible into the spirit and purpose of the founder, and each appointment should have this chiefly in view. A book like this is studied with growing awe. These many funds, large and small, very recent and centuries old, are products of piety, patriotism and philanthropy. The donors were impressed with the immortality of human society, and realized that higher education was its best safeguard, and that the poorest should have equal rights with the richest in the republicanism of culture. Not only parents who encourage commonplace sons to seek these appointments; but students who, having received them, do not feel sacredly quickened by the spirit of the ancient donors to whose memory this book is dedicated, to put forth all their powers to make their own lives felt in a remote future, are wanting in reverence for one of the noblest traits and acts of man. By the careful chronicler of the German universities the individuality of each fund has been sacredly maintained, and they have not, as has sometimes occurred in this country and in England, been fused together for more convenient administration to the effacement of the personality of more ancient donors. In France the state wishes to occupy this position of beneficence to students, and in voting individual aid to the more advanced among them which it does very generously, it permits no rivalry in this sacred function by individuals.

To get a general view of these funds we have tabulated all of those at Leipzig and Berlin. In Leipzig the smallest capital fund is about 37 dollars, while the largest exceed 20,000 dollars each. The oldest was established in 1325 by Duke Frederick, while nearly as many new ones were created between 1880 and 1885, when the survey ends, as in any entire decade before. Between 1550 and 1800 about one new fund, benefiting on a average nearly two students, was established each year. The last quarter of the last half century, and the decade 1860-70 were exceptionally prolific. Of all the Leipzig founders 182 gave precedence to students from some particular place, 173 preferred those of some family, mostly their own, 83 preferred those fitted at a particular school, and 74 preferred students of theology. Most recent founders who express a preference give it to science, while a few decades ago philology was often favored. Of the beneficiaries 278 are family, 269 place, 127 theology, and 115 fitting school, etc., some specifying one and some two or more of these conditions. The average amount to each student is about 26 dollars, but each may be benefited by several of the nearly 400 funds which may be distributed among 789 beneficiaries.

The University of Berlin is noted not only for the number but for the variety of its stipends. Some are founded by venerable professors without family who wish their savings to revert to their own university home, or department, or to encourage some aspect or phase of it. One large fund was thus bestowed by a bank which had won a still larger sum in a lottery. Some were voted to the university by townships, the income to be applied to students from that town; some by pupils of a distinguished professor to perpetuate his name; some by churches; others by charitable societies, chambers of commerce, free mason lodges, etc. Most, however, are by individuals of moderate means. Some are for sons of the nobility only, some for Jews only, some for professors' sons, some for inmates of orphan asylums and other special institutions, some for best scholars in a particular preparatory branch, some for artists' sons or artisans' sons, many for poor students. These funds are awarded by local mayors, heads of high schools, school boards, clergymen, churches, banks, boards of aldermen, parish committeemen, judges, etc., in the locality where the donor lived, or often by his oldest living descendant or member of his family. They are often assigned at the university itself by the faculty as a body or by individual professors of the subject, by church consistory, or bishop, by the rector, academic senate, by the minister of education, etc. Most appointments are made

for one year at a time, but some are for two, three or even four years. The income of some alternates between expenditure and addition to the principal or between student and hospitals, artists, paupers, normal schools, etc. All these conditions made by even the most ancient founders are not only faithfully chronicled but piously conformed to and the name of every donor sacredly cherished. These funds are variously invested and, as we infer from the somewhat exceptional cases where principal and interest are both given, the rate is rarely more than four per cent.

In the business account of the Leipzig funds by the university secretary,¹ a list of free-table funds, 132 royal and 156 private, is given. About 160 students now avail themselves of the tables of the convictorium, while nearly one hundred students dine at the *Stadt Berlin* and the *Hotel de Pologne* on these funds. The royal wood stipend was transformed into a money equivalent in 1881, and now yields 10 marks each to 169 students. Free rooms are provided for 21 students, and an hospital fund provides free beds, care and treatment for the sick. In 1884, 863 students consulted at university expense the three university doctors. At the king's golden wedding in 1873, the so-called golden stipend fund of over 32,000 dollars for poor students who entered the university with the best marks in morals and scholarship, was established. It should be added that not a few of the larger funds have a brief set of royal statutes regulating their use. To some elaborate conditions are affixed, such as reports, dissertations. Stipends are also set apart for the university seminaries, which are often advantageous pecuniarily to students. Payments are usually monthly.

Grundsätze und Bedingungen der Ertheilung der Doctorwürde, etc. VON DR. MAX BAUMGART. Berlin, 1888, pp. 328.

This handy compilation contains the official requirements for the doctor's degree at all German and Swiss universities, including those at Vienna, Prag, Czernowitz, Gratz, Innsbruck, Dorpat, the academy at Münster and the Lyceum Hosianum at Braunsberg. The 22 German institutions contain 24 theological, 20 legal and medical each, and 21 philosophical faculties, making 85 in all. Tübingen has only seven, catholic and protestant theology, law, medicine, philosophy, political science, and natural science; Strasburg has (since 1873) a mathematical-natural science faculty; and Munich has a political science faculty; while Bonn and Breslau have both catholic and protestant theology; the academy at Münster has a catholic theological and a philosophical faculty only, and the other 15 universities have four faculties each. In Munich the philosophical faculty is one, yet is subdivided into two sections, a philosophical-philological-historical, and a mathematical-natural science section, each with its dean. The same is true in Würzburg since 1875, only one dean for both is chosen alternately from each section. In Bonn, the philosophical faculty has one dean but four divisions, each with its chairman, as follows: philosophy, philology, history and politics, mathematics, and natural science. In Leipzig the philosophic faculty has three sections: philology, history and philosophy, and mathematics and natural science. Here the sections aid each other in opinions about dissertations, etc. Mohl urged that the number of faculties should represent the scope of the universities' scientific work. The matter of the division of the philosophic faculty affects not only promotion to degrees, but the classical question, as in Hoffmann's well known address. In some universities the requirements are not codified. Each of the German Swiss universities has its own regulations, while Dorpat has the same regulation for all faculties save medicine, which has its own. In 1858 the University of Berlin strove to regulate degrees

¹ Verzeichniss der Stipendien und Beneficien, etc., 1885, p. 136.

in all universities on uniform principles. Military requirements were imposed on all German Austrian universities by the government in 1872. In 1876 Mommsen wrote an article on the pseudo-doctors in Germany, condemning promotion *in absentia*, with many opinions from leading professors on reforms in conferring this degree. Bluntschli and Heinze opposed dissertations and would base the degree on a public oral examination. Most objected to Mommsen's plan of uniformizing these requirements in Prussia. The minister of education, von Falke, forbade the dropping of oral examinations and an uniformization of standards, at least with non-Prussian universities, lest all above the required minima be neglected. Of the four faculties the fee for doctor's degree averages a trifle highest in law, then comes medicine and next theology. The difference is very slight, and these averages are accidental results. The lowest and the highest fees are in theology, viz., 150 and 600 marks. The average in these three departments is nearer 400 than 300 marks. Doctors' fees in the philosophical faculty are distinctly lower. In this country the fee for the doctor's degree is but 10 dollars in five of our largest universities, and we can find no case where it exceeds 35. In England the degree of doctor of philosophy is only given in Victoria University, where it costs 10 pounds, M. A. being 12 pounds in Oxford and Cambridge. In the Swiss universities the fee is but slightly lower than in Germany. In Austria it is 30 florins in all save Vienna. In German universities from 40 to 280 copies of the thesis must also be presented by the candidate to the university. Many give three or even four *notæ* or merit marks, from *summa cum laude* to *rite* or *sustinuit*. Some minutely schedule off all majors and minors possible (Dorpat perhaps with most detail), and others prearrange with each individual the scope of his examination. Often it is required that on each thesis shall be printed, "Approved as a thesis for the degree of Ph. D. by———" the head of the department. The *curriculum vitæ* is still required; the disputation is falling into disuse. The preliminary examination or *tentamen* may be only a few days, or is often a few months, before the final or *rigorosum*. The minimum length of the dissertation is sometimes fixed at, e. g., two forms, which is a common requirement, each form in Germany costing about 10 dollars. Each faculty has its Latin sponson, to which the student makes brief reply, as well as often an introductory formula or proemium. He must still often take an oath that he wrote his dissertation without help, and sometimes a unanimous vote that it is an addition to his science is required. Sometimes he must furnish the faculty with a large number of copies of his diploma, and in theology he often receives a Bible and ring. Sometimes a professional oath is required. After all examinations and theses the act of promotion may be postponed months and even years. The academic triennium is nearly always required, and in medicine four years is now often the minimum for Germans.

Interesting special cases are the following: At Strassburg whoever obtains the prize of the Max Müller foundation for a thesis requires no further test for it as a doctor's dissertation. At Bonn an A. M. degree may be given on very severe conditions, viz., the triennium failure excludes from a second attempt for two years; a detailed record of each examination is kept; the examiners are numerous, and besides the specialty, must question on philosophy, mathematics and natural science. This degree is intended to attest capacity to enter at once upon the work of an academic instructor. If the candidate selects his opponents, one must be a member of the faculty; but if they are appointed, any third year student who receives a stipend, a repetent, and a docent, may serve, one on each thesis, which must be taken up in that order. Finally any person present may respond. The doctor's degree however carries that of master of arts with it and is more special, while the disputation of a doctor can in no case be based on his thesis. The doctor's oath in Bonn

must be taken with his hand on the crossed sceptres of the two beadles. Both these degrees are occasionally honorary, but only for actual and distinguished services in the department which confers them. Preliminary examinations are often required of all in languages and philosophy, or these are included as a third obligatory minor subject in the oral examination, or a classical examination is required if the dissertation is not written in Latin. The latter is indispensable unless a previously printed work of the candidate is accepted.

Die Reform (der Doktorpromotion.) Statistische Beiträge von Dr. Max Oberbreyer, Eisenach p. 155.

This is chiefly a collection of all articles of importance in chronological order, published in newspapers and journals upon the question of conferring doctor's degrees at a time when the subject was exciting great attention in Germany. The University of Berlin undertook to uniformize the requirements for these degrees in 1858 in order to thus oppose their growing deterioration; its plans laid chief stress upon oral examination, printed dissertations and public disputation. Most Universities approved this plan, but some did not, and a few refused to communicate their own rules on the subject. Views were so diverse that even the plan of a congress of delegates from Universities was abandoned, and Berlin ceased her efforts. Since then, and directly due to this agitation, many Universities have reformed their conditions, but a few cling even to the *promotion in absentia*, the worst abuse of all. Th. Mommsen's article on the German Pseudo-doctors in 1876, which started the prolonged discussion, was called out by a plagiarized thesis accepted by the Rostock Faculty, and stirred up a hornet's nest. Letters from most of the smaller Universities protested that they did none of this "American" business. The public remonstrated, Rostock six days later did away with *absentia* degrees for ever, and Göttingen followed, but Jena refused. Caricatures of the various processes involved in obtaining and in conferring degrees at the "doctor factories" abounded, till at length Mommsen published his admirable article on promotion-reform. The conference here proposed was to ignore all degrees not conferred upon the conditions it should determine, and sought equal fees and methods in all faculties, and even uniform style of publication for theses, each with its number in course, and all brought into one market, with one index. They would then cease to be the plague of every book-dealer, librarian and specialist. In the legal and philosophical faculty, where entrance to active life is not absolutely conditioned on the doctor's degree, conditions should be more severe. Publication of the thesis now takes the place of the old verbal tournament, and should be imperative and the name of the professor who recommends it as suitable for a thesis should be printed on it. This is in fact the test of universities; the good insist on it, the bad neglect it. Theses should not be merely printed, but circulated among the best judges, and given all convenient publicity. Each thesis must actually advance the subject to which it contributes. Mommsen's conference was to have pledged all participating Universities to refuse to recognize all academic titles not conformable to their standards. Even foreign Universities might join. Certain state examinations should be permitted, and certain scientific and personal associations, like the "Kreisphysicate," should receive, and certain stipends, etc., should be awarded only to, graduates of Universities which were affiliated or approved. Students of these Universities might take their examinations at any affiliated University, even if they had not studied there. The fees for different faculties need not be the same, but it is needful that in the same faculty fees should be the same for all Universities. Bluntschli would even drop the dissertation as an "academic hair shirt" in favor of the publicity of the oral examinations, and protested against Mommsen's "excommunication" of smaller Universities.

Allgemeiner Deutschen Hochschulen—Almanach, von DR. R. KUKULA. Wien, 1888, pp. 1000.

This new and comprehensive bibliographic undertaking gives the date of birth, present position and titles of works of all German professors, not only in Universities but in high technical schools and many Gymnasias and real-school grades, if they have published anything of importance. For about 2000 of the names the editor had to write the brief sketch himself, while very many others not only replied to the circular but overwhelmed him with material. It is therefore not surprising to note at once the entire omission of some important names and pages of titles given by professors almost unknown. The editor complains of the wretched handwriting of many of his savants. A supplementary volume is announced to supply the defects of this. A subject or department index is also greatly needed. Altogether, however, we know of no work which gives in brief compass so impressive a presentation of the immense literary and scientific productivity of contemporary German professors as these thousand pages and five or six thousand names and perhaps 30,000 titles. Such a list of titles and the printed contributions of American professors would be interesting and valuable, but would it fill 1,000 pages?

Lehrbuch der Erziehung und des Unterrichts mit besonderer Berücksichtigung der psychologischen Grundlagen, Für Lehrer und Lehrerinnen, von FERDINAND LEUTZ, direktor des Groszh Bad. Lehrerseminars I. in Karlsruhe I. Teil. Die Erziehungslehre, Zweite Auflage. Tauberbischofsheim, 1887. S. 213. II. Thell, Unterrichtslehre, 1890, s. 445.

A few years ago a new Baden school law required that in all normal schools psychology should be taught, and in the closest connection with the stages of the development of the psychic life of the child. To treat psychology in this way is bitterly hard for those who have settled systems, for with these systems psychogenesis is as revolutionary as Darwinism was to all conceptions of eternally fixed species. Dr. Leutz, however, at once set about writing a text-book that should conform to this significant if not somewhat epochal law. Although the method thus imposed on so true an Herbartian, and follower of Waitz, Ziller, Rein and especially Kern, plays havoc with the "concentration" which is a chief Shiboleth of their school and involves repetition, and is not perhaps the best that could be chosen for the analysis so dear to the ordinary pedagogue of these subjects, Leutz admits that it is the most interesting to students. Only Kahle and Pfisterer have seriously attempted to follow the child's stages of development in the text books of psychology, while Strümpell, Rüegg, Schumann and others make hardly more than a feeble pretence of doing so. Of course home as well as school must be taken into account, for many of the most interesting phenomena as well as much of the fullest and best literature fall in the period preceding school age, but just this helps most of all to a love of children and of teaching, without which the pedagogue is a mere day laborer. The author has not availed himself, however, of all the best sources of child psychology in his own country and knows nothing at all of what has been done in other lands. The stages of childhood development are very inadequately described, and with as little sympathy as insight. The body of the first volume is a detailed presentation of the ordinary German Herbartianism. With all its short comings this has the great advantage of treating of feelings, will, appetites, etc., thus covering in a rough practical way important areas of human nature not yet conquered by modern scientific psychology. The marked features of the book are further: the constant reference to German poetic literature for illustrations of psychological principles and never to scientific sources; the copious lists of text-books, of illustrative apparatus in connection with each branch of school instruction; and the frequent

illustration of principle by the description of a poetical lesson or two. The book is, on the whole, the best in its field in German, and but for its rather tedious voluminousness we should hope to see it in English, and should certainly be glad to as it is.

Gesinnungsunterricht und Kulturgeschichte ; zur pädagogischen Kritik
von DR. E. von SALLWÜRK Langensalza. Hermann Beyer and
Söhne.

Instruction through matter that appeals to the feelings, social, moral, and religious—*Gesinnungsunterricht*,—may be regarded from different standpoints. To provide the pupil for his future experience,—may be styled the “pragmatic” standpoint. Less precarious is the plan of following, in the presentation of the material, the natural order of development of ideas in the experience of the child. This may be called an “organic” instruction. But we may accept the view that the moral development of the individual follows the course of the historical development of the human race in regard to culture. In this case we shall adopt as our guide, in ordering the presentation of material, what may be called the “genetic” standpoint. Are Ziller and his school justified in assuming that what we have to do in education is to take the pupil through a course of stages of development corresponding to the course through which mankind has passed. This book is a discussion of the question, and most of it is a consideration of the Ziller theory of stages of culture. There is a chapter upon *Gesinnungsunterricht* before Herbart; another on Herbart; a third on Ziller; a fourth on *Gesinnungsunterricht* in the Ziller school. The views of Willmann, Staude, and Beyer are noted. The last holds that the individual goes over the same course that mankind has gone over: in analogy with the theory of the later natural science, that ontogenesis is an abbreviated phylogenesis. The material of instruction accordingly is found by taking those points in the history of mankind that mark the progress of human labor in separate fields.” By “labor” (*Arbeit*) Beyer means all human activity that is directed to the comprehension of the objective world. With him natural science takes a more prominent place than with Ziller, goes along, indeed, parallel to the *Gesinnungsunterricht*. But the close relationship between the *Gesinnungsstoff* and the mental world of the pupil is lacking in the natural-science-instruction of Beyer. The discovery of fire, which is such an important step in human development, has not left any special trace, or stage, that has its parallel now in the life of the individual. Hirt (W.) is mainly in accord with Ziller, but would introduce, in the fourth year, along with the study of the time of the Hebrew Judges, a parallel course from Greek, Roman and German history. He thus increases the amount of historical material till it becomes enormous; and expects the learner to pass through the same moral modifications twice, as the development periods of German history are not presented till long after the corresponding stages in Greek and and Roman history have been put by. Hirt thus gets far away from Ziller, though apparently intending merely to correct Ziller's plan of study in some special features.

What is there in the comprehensive work of Ziller and his school, with their theory of concentric circles of instruction and stages of culture,—for pedagogy to appropriate as of permanent worth? The beginnings of human culture are beyond our reach. We cannot comprehend that there was a time when mankind was without fire, without weapons for fighting beasts. The stages of the hunter, the nomad of the agriculturalist, we know only after they are far advanced, and we cannot make the stages of school instruction correspond fully with the development of the race. Besides, the course of the race has not been straightforward, but sometimes crooked and backward, and intermittent, and we do not desire that the school pupil should imitate mankind's digressions and relapses.

In intellectual and ethical culture it cannot be worth while to try to make the learner "live through" all the stages of the development of humanity; learn the Mexican picture-writing, or speak in word-stems, or live a while without positive morality. We had better take advantage of the results of centuries of culture as these results present themselves in our pupils when we begin to instruct them. In the domain of morals it may fairly be questioned whether the development of the individual imitates that of mankind at large. And is it wise to assume that the "protestant" German empire and the Lutheran catechism represent the highest stage yet attained of human culture. Ziller ought not to talk of stages-of-culture as the foundation of his system, for his scheme of instruction includes only ethical and religious development. And the details of his arrangement are artificial and ill-founded. What is of lasting value is the view that every school should give *Gesinnungsunterricht* and that historically ordered or arranged.

H. W. BROWN.

Die Pädagogische Pathologie oder die Lehre von den Fehlern der Kinder. von LUDWIG STRÜMPPELL. Leipzig, 1890, pp. VI. 225.

Following the principles expressed in his *Psychologie* and *Psychologische Pädagogik* Prof. Strümpell has attempted in this book to lay the foundation for a study of "Pedagogical Pathology" which shall include all those activities of children which are deemed faults by teachers. The task of such a study is to observe children and make a catalogue of their faults, and to consider the etiology, prophylactics, and therapeutics of such faults. As a beginning of such study Prof. Strümpell has made an alphabetical index of all the words used by parents, teachers and others to designate the faults of children. He has also classified these faults, considered the analogies and differences between medical pathology and pedagogical pathology, the analogy between medical and pedagogical therapeutics, and the like.

W. H. B.

Die Erziehungsschule nach psychologischen Grundsätzen. Eine pädagogische Skizze in Form eines Lehrplanes. E. DÖRING.

This book presents an elaborate plan of instruction for the *Mittelschule*, a school holding a place between the *Volkschulen* and the *Gymnasien*, and intended to instruct and train boys, from six to fifteen years of age, belonging to the middle class of society. The plan is based essentially on the principles of Herbart. Such a school ought to teach the science of self-education, says the author, ought to make the pupil capable of going on with his education himself. Too often, upon entering life his school knowledge is found to be rubbish. The school ought to impart a living knowledge, that impels the youth to the gaining of further knowledge, and makes him capable of getting it by his own efforts. A course of instruction is laid out in the various departments of study, for each of the eight classes, and in such detail that about fifty pages of the book are occupied with the instruction in religion alone. One of the best things of general application that are said by the author is this. What seems interesting to the teacher is often very tedious to the pupils, whereas if he denies himself and holds the pupils to self-activity, he is perhaps tedious to himself but to them very interesting.

H. W. BROWN.

Conférence sur l'Enseignement par FRANK HORRIDGE, 1890.

La Science de l'Enseignement, par le même auteur, 1888. Paris. Arthur Rousseau, Editeur.

Was lernen unsere Söhne? Was sollen sie lernen? Praktische Vorschläge zu einer neuen Schule, u. s. w. Von einem Ungenannten, (also Frank Horrridge), Heinrich Minden, Dresden und Leipzig, 1891.

In these brochures the author outlines a scheme of education differing radically from that at present in vogue. He attempts to classify the subjects which should be studied and taught into categories of equal value, viz: *Raisonnement, nature humaine, langage, événements, nombre, esprit de saillie, force, musique, couleur, forme*. Each of these should be taught three hours a week. The scholars should be classified entirely according to their individual aptitudes for the various categories. They should be left free to develop their natural tastes, and the school thus be made to assist the parent in the choice of a profession. "*Was lernen unsere Söhne*" contains the substance of the author's ideas, and also plans of studies and a chart indicating the supposed value of each category for the different callings in life.

H. W. B.

L'enseignement Commercial et les Ecoles de Commerce en France et dans le Monde Entier. Par EUGÈNE LÉAUTEY. Paris, 1886, pp. 774.

Education saves us from decay, but science must be vulgarized. The *Ecole supérieure de Commerce de Paris* was founded by two French merchants, Brochard and Lequet, in 1820, nine years before the *Ecole Centrale des Arts et Manufactures*. Public opinion did not then recognize the necessity, utility or even possibility of such an institution. It was said that to succeed it must teach trade and industrial secrets. The various kinds of knowledge would thus be hard to gather, and gathered they would be hard to curricularize. Such a school would have no clientele at first but must create it. It was of a type then absolutely new, where experience and practice had so far been the only school, and industry had felt little need of instruction. Again it was said that commerce could not be taught if for no other reason that it comprised too many specialties. Such specious objections prevailed with shallow men and men of routine who could not see how much more rapidly and surely youth thus trained would advance. There were no professors. It was said the French spirit was not adapted to reckon with the remote geographic conditions or the long-ranged time considerations necessary for large business enterprises. There were no germs of aptitude that needed this incubation, no progress that needed to feel its way by slow statistical methods to a far more rapid pace by economic instruction. Again after long and brilliant wars nations do not readily pass to the positivism of mercantile careers. Young men prefer professional or even literary careers at such periods and derogate business. Universities and lycées fostered those effete classical ideals that still paralyze industry and commerce in France. A council composed of bankers, manufacturers and merchants organized a triple programme of three years and three offices. Their tentatives have ever since been the basis of this new education in all its subsequent departures. In 1830 the school collapsed from mismanagement when A. Blanqui, a former professor, assumed entire control and for 24 years wrought for the plan and school with singular ability, and died a martyr to his faith in the idea. From 1857 to 1869 the school grew, and itself overshadowed all the vigorous personalities in its faculty. Since 1869 when the chamber of commerce bought and subsidized it it has reached its apogee.

The school now has about 120 pupils, about one-third are demi pensioners and the rest interns, and nearly one-third are foreigners. Its council of 25 members has for its president the minister of commerce and industry. It is situated at 105 rue Amelot. Applicants must be between 16 and 20. Each year six prize scholarships are open to competition in 10 largest cities in France. For all other interns the price for all is 2000 francs per year. The first year or office comprises English, German, French, natural history, physics, chemistry, history, geography, literature and accounts. This year is so hard that many must repeat it before being able to enter the next year. Here commercial history and geography, law, and applied science, raw materials, and

Spanish and Italian are taken up. In the third comptoir, book and insurance calculations, technology and other studies are pursued. The official school day is six hours in classes, four in study, five for recreation, and nine for rest. The present director, M. Jules Grelley, was a distinguished instructor in the École Polytechnique. There are 29 professors and seven repiteurs. It has graduated nearly 6000 business men, and has done very much to found business upon science, to keep commercial customs severely honest, and to demonstrate the business value of honesty which should be the profession of a business man. A graduate of such a school knows in a general way the systems and policies of taxations in various lands, something of leading industrial processes, banking and financial systems and investments, exact statistical methods, accounts, etc., and is sure to take large and generous views of his subjects. There are also local and one general association of alumni, a monthly bulletin, and a project of mutual insurance against sudden and imminent bankruptcy is contemplated. There is also a Paris society, the *Adolph Blanqui*, which dines and studies further.

The *École des Hautes Etudes* originated with the Athénée Oriental, a learned society which laid down the principle that commercial relations are directly as the intellectual level of a people. They began by appointing a committee to draw up questions to be submitted to eminent men of affairs at home and abroad. Comparative commercial legislation, oriental languages, etc., would widen commercial relations and develop the moral and mental qualities needed to enoble the profession of business. It was to be especially a training school for consuls who were not exhausting their opportunities for unfolding the business opportunities of France. This school intended to be the highest and most complete of its kind in the world was opened in 1881. It was to be a faculty like those leading to the learned societies according to the inaugural of Gustave Roy. Its magnificent building, 108 boulevard Malesherbes, contains two vast amphitheaters, 12 study rooms, and business offices for study, museums, laboratories, a library, 80 chambers for interns and a dining room for 300, 10 examination rooms, etc. The number of pupils have steadily grown from 50 to 128, of whom nearly one-tenth have been foreigners, as was desired about one-half graduates of the lycées. The age of admission was about 18. The chamber of commerce under the patronage of which it exists (it receives no aid from the state), has established scholarship funds and stipends, as have perhaps a dozen other commercial associations, including gas, omnibus companies, etc., and private citizens. The course was two years but has been prolonged to three by adding a preparatory year. Commerce has too long been regarded as a secondary career. The confection of a programme that should be up to the level of modern knowledge and needs and train consuls to far greater efficiency, in short to do for commerce what modern military education has done for war was the end. The director, M. Ed. Jourdan, has striven to make the courses somewhat more advanced than those of the École Supérieure just described, but although it has constantly grown it has by no means yet realized the hopes of its friends in numbers, and preparatory courses which it was found advisable to introduce have perhaps temporarily lowered the standard intended, yet on the whole, taking all its appointments, its large and able corps of instructors, it is no doubt the best of its kind in the world. Perhaps still further changes and reforms are needed before it shall have established a settled *modus vivendi* with the different branches of the public service. The ideal that most of the entering class shall be composed of the best graduates of the lycées may yet be realized. Natural prosperity says the direction depends somewhat upon uprooting the too prevalent idea of these young men that a commercial is less dignified or honorable than a professional or administrative career.

L'Ecole Commerciale, No. 23 Avenue Trudaine, was opened in 1863. In 1860 M. Denière made an admirable historical report of industrial and commercial education up to date, closing by suggesting some new departures from the school of Tergot and the Chaptal College. The new institution should have a four years course but might give certificates of proficiency to those who were there less time. The age should at least be 12 years, the tuition 220 francs; there should be only day scholars, it should be in a densely populated part of Paris. The Chamber of Commerce adopted this report and appointed a committee, and set apart 700,000 francs to carry out these ideas. From 80 the first year, the school has grown to over 500 pupils. In 1874, free evening courses were established for women. Over 1,700 pupils have attended and another similar school in another part of the city is contemplated. The minister of commerce has contributed 10 scholarships, and the Chamber of Commerce 10, and 22 other leading business establishments, bankers, railroads, weavers, dyers, insurance societies, etc., have altogether given 130 more, and 10 other great industries have given medals of prizes. The expenses of the school are about 120,000 francs per year, and 20 instructors, and a strong society of alumni or propaganda.

The Institut Commercial, was opened in 1885, 51 rue de la Chaussée d'Autin, to form a personnel of foreign commerce, modern languages, etc. Visits to shops and mercantile establishments and instructions by representations of these firms was the plan of M. Maumy, its chief advocate. It was a private enterprise and 200 men subscribed 200,000 francs to the stock with shares at 500 francs. There are now over 200 pupils. Many individuals and firms have given scholarships and donations, and several score of firms have contributed to the museum. Pupils enter at the age of 13; the course is three years; there are no interns. This school is an attempt of French commerce to send as business agents in foreign countries of the great houses, not the unclassed, pretentious men who have not succeeded at home, but well instructed, modest, industrious men. Foreign languages play an important part in the course of studies. Every Monday some representative of a prominent business house explains his vocation with many concrete illustrations, demonstrations of products, processes, etc. During the first half year excursions were made by the pupils to 65 prominent factories or public institutions. A. Bernardini is now the head of the school.

L'Ecole pratique de Commerce et de Comptabilité was founded in 1850, by M. Rigier, senior, who soon died a martyr to his task, leaving the work to his son in 1875. The father sought to abridge the long course or apprenticeship to the shortest term possible, and to simplify and systematize the old cumbrous system of book-keeping, etc. In his publications professors in this school find the subject-matter of much of their course ready-made. The school is at 19 rue des Halles. Its hours are 8-11 a. m., 2-5 p. m., 8-10 evening. Each course lasts three months, and costs 60 francs. Pupils are received from 13 to 25 years of age and can enter at any time. The school is a set of officers, each with all necessary appliances and with all as real as possible. At the shipping or consigning bureau, bundles are wrapped, freight bills, bills of lading, etc., are made. At the room for commercial documents, bills, receipts, quittances, deeds, orders, letters of credit, freight bills, commission notes, bills of sale, etc., are not only seen but made. Book-keeping is a complex and elaborate department. So are the cash departments, the department of correspondence, the salesroom, the library, etc. At first imitation bank-notes, stamps, and bundles were used, now all is genuine and the latter are mostly books. This institution is very complex and of great interest. Some 450,000 people enter industrial and mercantile pursuits yearly in France, and large as are the numbers who take these courses the graduates of this school cannot supply the demand for them.

The other chief commercial schools in France are the following:—*L'Ecole des Sciences et Lettres* at Rouen has a section of sciences applied to industry. It was founded in 1871. Its new courses were Commercial Microscopy, Railroad Tariffs, General History of Commerce. It was attached to the above school in 1883. The city furnishes building; age of admission 14, course two years, fee 250 francs. It has steadily decreased in numbers during the last few years and seems likely to die.

L'Ecole Supérieure de Commerce et de Tissage, in Lyons sprung in a sense from the school of Mulhouse, 1866-1872, which before its extinction acquired such just fame under the impulsion of the brothers Siegfried. The president of the Lyon Chamber of Commerce. M. Guérin first sought to found in the second city of France a school which should make it no longer necessary for merchants to employ Germans and Swiss as their best clerks. The new school was opened 1872. The weaving division alone had last year 137 pupils. There are 18 internes and nine foreigners. It has a growing number of scholarships. Age of admission 14, course two years in each division, the higher and lower. This school retains the patriotic fervor of the time at which it was founded. The pupils are incited to make it a serious moral purpose of their lives to establish French commerce as in a sense the basis not only of national well-being but of all arts and sciences. Honesty is inculcated in every way as the basis of commerce.

L'Ecole Supérieure de Commerce de Marseille was opened 1872, with a fund of 450,000 francs. It is a favorite school for Greeks, Spaniards and Italians and usually has over 100 pupils. Its course is two years with a preparatory year. Age of admission 14.

L'Ecole Supérieure de Commerce de Havre was opened 1871, and that of Bordeaux in 1874.

L'Ecole Municipale Professionnelle of Reims was opened 1875 and has an agricultural department.

All these schools represent in a sense the endeavors of the minister of commerce under whom they stand. So far as he has the rare wisdom to advance commerce, to seriously utilize and develop there sources of the French colonies, to form chambers of commerce in France and abroad, as well as professional syndicates and to elevate business men as well as organization to see their own interests in a large and long-ranged view, these schools will thrive.

There are also 14 different associations which have established free evening courses in commerce or business, all but two of them since the war of 1870, and having over 6000 male and about 2,500 female pupils per year, and in some municipal schools and lycées commercial courses have been introduced.

GERMANY. The famous *Public Institute of Commerce* at Leipsig is the property of a corporation of merchants, the "Kramer Innung," which has existed since 1479. The school was founded in 1832 at the instigation of a member, C. L. Hammer. The government still gives 4,500 marks per year. Its first director, D. A. Schiebe, was a man of energy and discretion, and his commercial arithmetic and other text books are still among the best of their kind. The next director, A. Steinhaus, had 27 years experience in business houses in seven or eight different countries. C. Wulfrum, the present head of the school, has been successful, and the institution now has nearly 500 students. Age of entrance, 14; course three years. All who pass their final examination are exempt from two of the three years of military service. The school costs about 78,000 marks per year.

The *German Academy of Commerce* at Prague was opened 1856 and its present head, Karl Arenz, is still its director. Its course is three years, and age of admission 14. The government has given 75,000 francs; pupils from the city pay 250 Those from outside pay 475 francs tuition.

There is no boarding establishment, and graduates have the same military exemption as in Leipzig. Schools at Vienna, Pesth, Gratz, and Lintz, have since been made on its pattern. In Austria alone commerce is taught in 302 establishments to nearly 6000 regular students, and nearly 40,000 clerks and apprentices. In other German states there are at least 85 commercial schools and courses. Special and independent schools of commerce are found in nearly every city of 10,000 inhabitants or even less. There are also private schools, and we know of several others not included in our author's list.

The courses in these German schools are, as a rule, more severe than in French schools of the same grade and age. These graduates are well instructed, well disciplined, enterprising, they have the keys to many things in their admirable knowledge of modern languages. They may annihilate French commerce as German soldiers did her armies in 1870.

The *Institute Supérieur de Commerce* at Antwerp was projected in 1847, but opened in 1853, and is an admirable institution with now less than 150 pupils. Perhaps no school of its class has so well maintained the international character so desirable in such schools. The course is two years and the minimum age of admission is 16 and one-half, and the methods and plan simulate those of a university. The director, M. Edm. Grandgaigenage, lays great stress upon the practical part of the course, and the sons of the best and wealthiest people of the city attend the institute. This is the only institute of the kind in a country of five and a half million.

It is remarkable that England, the most commercial country in the world has almost no commercial schools. The author is able to find but 24 institutions in all Great Britain which have even any courses that might be called commercial, and not one commercial school proper.

Spain has commercial schools at Barcelona, Malaga and Palma. Holland has one at Amsterdam as an annex, and another at Harlem. Italy has 15, of which the chief is at Venice, opened in 1868 in the Foscari palace, the use of which is given by the city. It trains professors for lower commercial schools, as part of the work. It has had many gifts, and a complete course lasts five years, and it has about 125 students, a valuable library and museum. Roumania has six schools of commerce. Russia has a school of commerce at Moscow founded in 1804, and now nearly self-supporting, one at Odessa, one at St. Petersburg, and one at Vassovia, and commercial lectures in other schools. There is one each at Stockholm, Gothenbourg and Christiania. Switzerland has one at Berne, founded in 1880. Turkey has one founded in 1831, and reconstructed in 1831.

Eastman's Business College at Poughkeepsie, and the Spencerian Business College at Washington are described. The student may enter any day of the year with equal advantages, and no qualifications are required. He establishes himself in the college, makes purchases, invests, deposits, pays rent and taxes, keeps his books, as the course, if it can be called such, is rarely more than three months, very many, often college graduates enter. Nelson's Ladies Business College in Cincinnati is described. In this country there are 269 business colleges or courses. The very meager nature of many of these courses is indicated in the tables given.

NOTE ON AGRICULTURAL SCHOOLS IN EUROPE. The *National Agronomique* of Paris stands easily at the head. This institute has existed since 1876, and is independent, without connection with the University of France or the Sorbonne. The entrance conditions are very difficult, especially for foreigners. The final test, for the middle instruction, the so-called baccalaureate, (which marks the close of the Lycees course) is not sufficient for admission, but a special preparation of from one to two years is demanded. At the last entrance examination 153 candidates offered themselves, of whom only one-third could be received, as there

were only some fifty vacancies. The school has especially, for its aim, the education of professors, teachers of agriculture, directors of experiment stations, ministerial offices, civil engineers, etc. Only a small part of the students return later to practical agriculture. The instruction is chiefly theoretic, yet there are laboratories for practical exercises with cattle, in horticulture, and although the school has an agricultural organization the students do not engage in special agricultural work, for a knowledge of this is pre-supposed. The term of study is two years, yet the students who have received the title of *Diplômé de l'Enseignement Supérieur de l'Agriculture*, can remain there three years, in order to receive, in the different laboratories of the institution, further practical instruction.

Beside this Institute Agronomique, there are, in France, three "*Ecoles régionales d'Agriculture*." These have especially for their purpose education in practical husbandry. The preparation demanded for entrance to the school is small. Three to four classes of gymnasial education are sufficient. These schools are also independent and are called "*Ecoles régionales*," because they must correspond to the special agricultural character and products of the country about them. That of Greguon at Paris gives especial attention to the cultivation of corn, and secondarily to the keeping of cattle; that of Grandjouan, in the west, chiefly to the keeping of cattle, secondary cares for the cultivation of corn; that of Montpellier, in the south, chiefly cares for the products of the south, olives, silk worms, etc., especially the cultivation of the vine, and only a little for the breeding of cattle. In these schools the practical side preponderates. Near Montpellier is now a special school for the cultivation of the vine in the neighborhood of Lyons, a so-called Beaujolais. The director of it is Mr. Pulliat. A very good school for the cultivation of the garden is in Versailles near Paris, under the title, *Ecole Nationale d'Horticulture de Versailles*." Besides these schools almost all of the 86 departments have their agricultural schools or schools for the tilling of fields. Half these schools give also practical instruction in tilling, cattle feeding, etc. The other part is chiefly theoretical. Mr. Hérisson, formerly Inspector of Agriculture, but very lately Professor of Mechanics at the Institute Agronomique in Paris, last year, at the Parisian Exposition, produced an account of these schools in the general agricultural congress. Whether this has appeared in separate print I cannot say.

Next to the state-schools, there are still other private schools which are especially supported by the catholic clergy. The best of these is the *Ecole d'Agriculture de St. Remy*. It is a theoretical-practical middle school. The Catholic Faculties of Lille university are now introducing agricultural instruction.

In Belgium, there are, beside several middle-schools, two higher institutions, of which, one (since 1878) has united with the Catholic University (Louvain.) The other belongs to the State and is in Gembloux. Both give the title, "*Ingénieur Agricole*," which is scarcely deserved, as the technical sciences taught are altogether too trifling. Higher mathematics is not at all demanded. Mechanics and even chemistry are taught but little. The time of study lasts three years, and the entrance conditions and the studies are about as those of the French National schools, Greguon and Montpellier. In Vilvarde, there is also a school, of agriculture. Switzerland has also agricultural middle-schools, e. g. at Strickhof near Zürich (the practical predominating) and that of Bern. Near by, is a polytechnic school in Zürich, and an agricultural department (for higher studies), which gives two diplomas according to the direction of study. The proper agriculturists receive this "*Diploma of Agriculture*," the civil engineer the diploma of civil engineering, which is indeed well deserved, as much is required. The time of study for the agriculturist is two and one-half years; for the technical scholars three and one-half years. The agricultural instruc-

tion is quite theoretic and more is learned with reference to the breeding of cattle than to the cultivation of the soil.

In Germany, are also many agricultural schools, both higher and lower. The lowest are the agricultural winter schools, then come the schools for tilling the fields and with the rank of a gymnasium of the second class, and which, as formerly in France, were allowed to give the final exemption from the one year military service. The higher agricultural institutions in Germany are distinguished as agricultural academies which are independent, and the agricultural institutes of the universities. The first were formerly predominant, but in the last three decades, have declined more and more while the university institutes have correspondingly grown.

Only within ten years, the agricultural high school, with the agricultural museum, was founded in Berlin. It is not connected with the university. It has beautiful collections, yet the instruction is considered inferior to that of Paris. Germany has 18 other higher agricultural normal schools, of which the most are institutes of the university. The most important of the last is that of Halle (Prof. Sachsen) which numbered the last winter 26 professional agriculturists. This has qualified teachers and fine arrangements. Next to be mentioned is that of Poppelsdorf Bonn, where are from 100 to 110 students of agriculture. The other institutions are less visited (Göttingen, Leipzig, Jena, etc.,) Of the independent academies, where the instruction is somewhat of a lower nature, Hohenheim in Würtemberg holds the first place. All in all, the requirements for entrance in Germany are easier, the care and direction of the students less than in France or in Switzerland; the professors are however well qualified. The independent academies give only testimonials on departure, the university-institutes a teaching certificate of first or second grade. One who has studied three years at least can be also granted a doctor's examination if he has a final testimonial and has completed a dissertation.

In Austria, there are fewer agricultural schools especially for the higher instruction. The most important is the agricultural high-school for the cultivation of the soil in Vienna; This is independent. It is also to be remarked, that the most important school for the cultivation of the vine in the German Kingdom is found in Geisenheim on the Rhine (a middle school) and in Austria in Klosterneuburg near Vienna. Both are horticultural schools.

With regard to other countries, the people of southern nationalities often go to Montpellier in France. In the south the vine and southern fruits (oranges, lemons, olives, etc.,) are more cultivated; in the north the raising of cattle and the cultivation of grain, and in this much discretion is given to instruction. With regard to the authorities a long explanation would be necessary to characterize every teacher, author or inquirer. In Germany the teaching forces are more scattered than in France where everything is centered in Paris so that only there is the best force to be found together.

Among the best authors on the subject are the following:—Cultivation of fields, Mr. Reislér, Inst. Agr. Paris, (Director); cattle-raising, M. Sanson, Professeur, Paris; Schribeaux, on farming, Herisson, on mechanics of farming; Prillieux, on pathology; Schloesing, Mäntz, Girard, etc., all professors of Paris. I must also add Grandeau, Leclerg, and Lerouteaux. Pullicit for cultivation of the vine.

In Germany, for general agriculture, see Märker of Halle, Wagner, and Mayor of Heidelberg, Stutzer of Poppelsdorf-Bonn. For raising cattle, J. Kühn of Halle, Krämer of Zürich, also Wilhelm and Hermann von Mathusins of Halle, Wilkens of Vienna. For cultivation of grain, Kühn of Halle; Nowacki of Zürich; Rimpan, of Schlangstadt. For agricultural machinery, Wüst, of Halle, Perls, of Vienna, Lazar of Pesth, etc.

DR. M. HUSS, *Agronomic-Engineer.*

La réforme de l'enseignement secondaire. Lettres au ministre de l'instruction publique, par FERDINAND RÉAL, Rédacteur en chef de l'Indépendant Rémois, avec une Lettre-Préface de M. Jules Simon, pp. 62, Reims Libraire F. Michaud, Éditeur.

The reform proposed in this Letter covers, not only the programmes and methods of instruction in the secondary schools of France, but the appointment and duties of the professors and tutors, and the bestowal of scholarships. The vital part of the reform, however, is that which relates to the classification of pupils and the compulsory courses of study. M. Réal reviews the present programmes and the changes that have been made in them by successive ministers of instruction to show that all that has been done has failed to reach the existing evils. There has been amelioration but no cure. A cure demands a complete recast of the organization, as well as of the plan and of the method of the secondary schools. He then sketches a plan somewhat in detail, and urges the minister to apply it to one school for the purpose of testing its merits. Substantially it is this.

In the words of M. Ernest Lavisse, member of the higher council of public instruction he would "substitute for the rigid system of classes, courses in which the pupils would be arranged according to their aptitudes, or even their tastes." A certain pupil, for instance, who has made rapid progress in mathematics, may be assigned to the highest class in mathematics, while because he is deficient in knowledge of the French language he may at the same time enter the lowest class in that study, and so on through all the subjects taught. The school will thus be composed of homogeneous groups to which the teachers will be able to adapt their instruction with the certainty of obtaining tangible results. Intelligent pupils will not be kept back by the "queues" of the class, and inferior pupils will not go beyond the limits of their natural abilities; they will go out of the school, however, better instructed in what they have studied. M. Réal is enthusiastic in contemplating the emulation that would be excited in a "homogeneous" class of students, and the enjoyment with which a teacher would instruct such a class. Pupils are to be allowed to choose the courses they will take, but only after conclusive tests of fitness, and with the approval of teachers and parents. A pupil may begin Latin in the first year and abandon it in the second; or, if he is strongly inclined, may choose scientific studies, and in case his literary tastes develop be transferred to the elementary classes in the dead languages. Among the many objections and difficulties pre-supposed and removed is the question, "what will become of the examinations? How can preparation be made for a degree?" M. Réal answers frankly that one of the great advantages of his reform will be the suppression of the Bachelor's degree. In place of it he proposes the following device. Every pupil on entering the school will be provided with a record book, *cahier scolaire*, which will be given to him when he leaves. Each year the teachers will enter in this *cahier*, under their signatures, the courses pursued and the results. Then whenever the pupil leaves he will take with him an exact record of what he has accomplished and this record will serve as a pass port whether he wishes to enter another school or to find employment. The courage of this reformer does not desert him at any point. If this multiplication of courses makes it necessary to lengthen the school day he sees no reason why the hours which by long custom have become fixed as the limits of school sessions should be regarded as sacred. He would have the hours regulated by the season and the demands of the work.

E. M. H.

Un Lycée sous la troisième République, par PAUL VERDUN, Paris, E. DENTER, éditeur, Libraire de la Société des gens de lettres et des auteurs dramatique. 1889, pp. 462.

"I shall be asked," says the author of this book in the preface, "why

I have sketched a picture of life in the provincial Lycées, and the portraits of the officers who direct them." To the anticipated question he replies, "For a number of years the statistics of the Minister of Public Instruction disclose a two-fold fact; there is a constant increase of expenses, and a not less constant decrease in the number of pupils in the schools supported by the State. In order to arrest this decadence the ministers load the programmes more and more, the *recteurs* change the regulations, the physicians publish reports on overwork and—the disorder increases, and the academic palaces are empty of pupils. On one side the expenses are enormous, on the other the results are pitiful. I have uncovered the sores of our Public Instruction because the wounds which remain hidden gangrene and cause the death of the whole body, while those that are exposed are easy to cure."

Seriously as this writer approaches his subject it is difficult to take him seriously, partly, perhaps, because his attack on the government management of the Lycées takes the form of a tale in which he gives minute details of the private life of his hero which are neither significant nor edifying, and partly because the state of things exposed is so surprising. The tale is the life of a tutor, that is, of a master who does not teach, but who watches the pupils at all times when they are not in the classes of the professors. The narrative of the difficulties and dangers which a young man in such a situation meets furnishes an opportunity to draw the portraits of the principals of several schools and to give the details of administration and government. Four different Lycées and one college are thus exhibited, the heads of which are declared to be types. In one instance the principal is a man of high moral character and sufficient mental endowments, who devotes his time and powers to the conduct of the school. The others are men as destitute of moral character as the Yorkshire schoolmasters whose occupation Dickens is said to have destroyed by painting the portrait of Squeers. If they are less ignorant and brutal they are not less wicked, and have the same object in view, namely, profit to themselves by the easiest means. One is an habitual drunkard, one gives all his time to the breeding of rabbits and all are controlled wholly by a desire to keep the number of their pupils from diminishing. All the evils naturally following such debasement in the heads of establishments abound; lack of discipline, moral corruption, failure of scholarship.

M. Verdun aims to expose the condition of the schools rather than to dwell on the causes of their decadence, but he hints at consolidation, secularization, favoritism, formality of inspection, and the difficulty of displacing a principal once appointed.

In 1882, an association of tutors was formed which began the publication of a journal called at first *Le Progrès Universitaire*, now *La Réforme Universitaire*. In consequence of this the condition of the tutors has been improved and some of the most incompetent principals have been dismissed. But if there is excuse for writing this book the state of things is still astonishingly bad.

E. M. H.

Manual Training in France. A. SALICIS, late Inspector-General of Manual Training, Educational Monograph, New York, 1890.

In 1882 manual training, which had existed chiefly in the form of apprenticeship or preparation for special callings, was made obligatory for the different grades of primary instruction. A special normal school for manual training was opened, with an attendance of 48 graduates of the Université de France. The school was suppressed after graduating 72 professors of manual training, most of whom are now engaged in the various normal schools. It is hoped that in 15 years most of the 40,000 elementary schools for boys will be provided with competent instruc-

tors. The object of elementary manual training is not to prepare for trades. Even the young children should begin active work with wood, instead of the quiet occupations of weaving, basket-work, plaiting, etc. In about half of the two hundred boys' schools in Paris the older pupils have manual work.

The extension of this instruction is still hampered by the lack of a definite programme and of competent teachers. J. F. REIGART.

Report of the Indian Education Commission, appointed by the Resolution of the Government of India, Feb. 3, 1882. Calcutta, Government printer, p. 639, and 77 pages of statistical tables.

After the provinces here chiefly considered came under British rule in 1854 an educational department was founded (1855-6), and examining universities established at Calcutta, Madras and Bombay (1857) which like that of London examined only but did not teach, but were affiliated with various colleges. The commission of 1882 was appointed to inquire how far the policy of 1854 had been adhered to and what progress had been made in a quarter of a century. This report recommends encouraging indigenous schools according to the results of examinations; that while their curriculum or personnel be interfered with as little as possible, they be inspected *in situ* by government boards if they wish aid, but otherwise be left alone. These schools were very reluctant to alter their methods or raise their standards. The unaided schools had to compete not only with improved native schools but with new government schools, which were pushed especially in the backward districts by the creation of boards to whom great discretionary power was given. Instead of the theory of downward filtration the committee recommend that the chief effort of the government be to extend primary schools, and that low cast pupils be brought into schools where practicable. For the establishment of secondary, unlike primary schools, local co-operation should be indispensable. Scholarships must all be made links between the different grades of institutions. Concerning the 65 colleges it is recommended that more native graduates be employed as instructors, that a moral text-book based on natural religion and not offensive to Mohammedan, Brahmins or others, be made that two per cent. of the government aid be appropriated to scholarships. In all fields of education, especially most of the higher, the government should plan to gradually withdraw and leave more and more to the locality. The government patronage of educated men must be systematized and encouraged. The report concludes by recommending special favors and encouragements to children of aboriginal tribes, and that the elementary instruction be in their own language if it has been reduced to writing, that girls schools be aided more than boys, that special teachers examinations be encouraged, that no boy be refused admission to government schools because he is of low cast, that Hindustani and Persian be taught in localities chiefly Mohammedan, that special schools be established for sons and relatives of native chiefs and noblemen, that vernacular school journals be encouraged, that text-book committees, voluntary in addition to official inspections, travelling university scholarships, alternative college courses, special lectures on the duty of man and citizens, be encouraged, and that a system of scholarships open to general competition and tenable in any college be established.

History of Indigenous Education in the Panjab since annexation and in 1882, by G. W. LEITNER, L. L. D., Calcutta, 1883.

This volume of 4-500 pages is made up of smaller papers and is a most remarkable and fascinating description of native schools of the several races and religions, as well as grades in the Panjab and an indictment of the policy of the British Government in trying, happily with but partial success, to supplant them by European schools of an inferior and hated

order, and a refutation of the preceding report on English education there. Nowhere was love of learning stronger or the sacrifices made to maintain it greater. These were ridiculed instead of being sympathetically studied and developed. Dr. Leitner arrived in India in 1864 and strove to arouse the old spirit of self-reliance among the natural native leaders who had retired before the supple *parvenus* of their race who would fawn upon the English and had thus come to monopolize official favors. By reviving these schools and introducing English into them he started a happier combination of eastern and western ideas. He thus strove to abolish government schools by means of voluntary native organizations and making the "comparative method" between eastern and western branches of learning a stimulus to all who study.

The Panjab is classical and teeming with noble and ancient memories, where the priest was professor and poet, and education both a religious and social duty. Fakirs, jogis, minstrels or genealogists, astrologists, or almanac-makers, pandits, and even Brahmins teach, and without class instruction that reduces intellects to a dull common level, in huts, markets, private dwellings of all sorts, on ships, and every child save the outcast alone is taught not only to read and write a difficult language and to compute, but a mass of traditional literature and morals. Teaching has made the Brahmin caste which is now maintained only by their monopoly of learning. It is a sacred duty for those who know to teach, and by virtue and education in four stages ending in asceticism and meditation it is possible to reach the gods. Elementary teaching often begins with a form of contract with God. The alphabet is sacred, and new letters have almost upset religious belief. In so subtle and complicated a language grammar is philosophy, and as the sage passes on in the curriculum and correspondingly progresses in virtue he often attains a point where he studies downward or backward till the consummation of his knowledge is focused upon the child's rudiments and thus re-incarnates his soul which had been re-born perhaps twice over by love of youthful studies. Schools are for elements and advanced branches and not only is instruction individual, but the student often travels from teacher to teacher, and takes an university course, one branch at a time, as in the "one study college" established some years since in this country. Genius is so common in India where only lack of the means of communication prevents it from bringing fame, and a savant's life is often so devoted to study that his curriculum is his biography, and his culture gives him such poise and repose, even if in rags, instead of making him restless rather than intelligent as is too often the case with western culture, and teaching of all kinds is so essentially private, not only with girls, and gives technical words, and even dialects peculiar to each trade, and a secret to all others, with its marvellous system of accounts and book-keeping, short-hand, and mental arithmetic in which even children are adepts, with its ideal curriculum of lexicography, grammar, logic, law, rhetoric, poetry and literature, the crown of all, but in which sure and finished science is forever set as gems, that it is not strange, that, when their conquerors tried to enforce an alien culture based on physical science and industry and trade which appertained to their lower classes, begun to organize schools by appointing inspectors who would banish privacy, teach by classes, even placing girls and boys side by side, when they had more to learn than to teach, despising memory which to them was the mother of all the muses, and the depository of all the sacred treasures of 3,000 years of greatness, teaching their children a new and strange language, and worse yet religious disbelief, causing their own schools to decline from one to every 1,441 inhabitants to one in 9,028 in a few years, that they hated such a policy and welcomed the plan of our author of simply aiding all native teachers who would add to their own a certain few government subjects. In the Panjab alone are at least 1000 indigenous schools

and nearly 100,000 pupils. Under government influence these have been reduced one-half. The Lahore College is now the centre of the new movement. Many quotations from sacred books, especially the *Hitopadesas*, placing knowledge above all other qualities and possessions reflects the national sentiments.

Professor H. P. BOWDITCH says as follows:

In any statistical inquiry the average value of a series of observations gives but a very imperfect idea of the series itself, since two series differing widely in their range may have the same average value. To meet this difficulty the method of percentile grades has been devised by Francis Galton, Esq., F. R. S. The method consists in determining a series of values representing limits which are reached by various percentages of the total number of observations. The value which divides the whole number of observations into two equal values, *i. e.* the value below which one-half, and above which the other half of the observations lie, is called the 50 percentile grade, and as a rule does not differ materially from the arithmetical average. The value below which 10 per cent. and above which 90 per cent. of the observations lie is known as the 10 percentile grade, etc., etc.

If observations are made upon the physical peculiarities of any natural group of objects as, for instance, upon the height of a number of individuals of the same age and nationalities, it will be found that the curve, the ordinates of which express the values at successive percentile grades, will be at the beginning concave and at the end convex toward the abscissa, while the greater part of the middle portion of the curve will not differ materially from a straight line inclined to the abscissa.

The application of this method to the study of observations made fifteen years ago upon the height and weight of about 24,000 Boston school children of both sexes leads to the following conclusions:

1. The period of accelerated growth in height and weight occurring just before the age of puberty, as revealed by a comparison of the average heights and weights at different ages, may also be observed when the values in successive years at any given percentile grade are compared with one another, but the period in question occurs earlier in the higher than in the lower percentile grades. In other words, large children have their period of accelerated growth at an earlier age than small ones.

2. The period during which girls are taller and heavier than boys of the same age, as shown by a comparison of their average heights and weights, exists also at the various percentile grades, but this period of female superiority occurs earlier in the higher than in the lower percentile grades. Superiority in height differs, however, from superiority in weight in the following respect, that the former is more marked, both in amount and duration, in the lower and the latter in the higher percentile grades.

In other words, during the period of female superiority tall girls surpass tall boys in height less than short girls surpass short boys while heavy girls exceed heavy boys in weight more than light girls exceed light boys.

Details of this investigation with tables and illustrative curves will be given in the next report of the Massachusetts State board of Health.

A new Review of National Education, by HEATHER BIGG. London 1890, pp. 117.

A national plan for catching and developing all genius, to avoid narcotizing with learning, to act as bear leader to young cubs home from school, teaching them of things they see on foot in city and country as the Great Teacher taught and to be mongers of brain seed, are commended. Memory should be trained unconsciously. Men mnemonically gifted

are often very feeble. Artificial groove education kills circumspection, and may make the mind only a phonograph repeating badly what is told. Save in mathematics, text books are rearrangements of advancing knowledge. The feudal minstrel was a great educator. Italy and Germany have been created by national ideals, which are feeble in England. Mr. Biggs wishes to see all the noblest in British chronicle and history from Arthur to Wellington gathered in one national book, and read in every school. It is not enough to sing Rule Britannia and God Save the Queen, but a great Race Book, a monument to the dead and a guide and inspiration to the living, forming and binding national aspirations, quickening the loyalty of Canada and Australia; should embody the racial idea in a British Bible. This gave a fixed character and line of direction to the ancient Hebrews. English history teems with soul-stirring examples and precedents. Well distilled and well instilled, such a book would express a racial idea whence might come formularies, lodges like that vast repository of potential forces now aimless save for its charities, free-masonry. The Old Testament was such a reservoir of moral power. It was a didactic engine quite apart from the chronicle of fact, embodying the highest lessons of history, the noblest hymns and epics and the centre of crystalization for the national spirit. Green's Short History took a long step towards this focusing within its field. From 10 to 20 is the most educational period. Later judging and balancing supervene. Leisured reading then must abound in school, and the moral and aesthetic heart of literature and history and not their shell of dates, details, philology, or grammar should be cultivated. As a first step, a body of censors should prepare a list of reading and all others should be excluded from school, as should mere grammarians and philologists, that the child may taste the fruits of the tree of life before those of the tree of knowledge.

A Plea for Pure Science. Address by H. A. ROWLAND. From the proceedings of the American Association for the Advancement of Science, Minneapolis Meeting. Salem, 1883, pp. 21.

This deserves a classic place in the historical literature of science. It was delivered on the eve of the scientific awakening here during the past few years, and its importance is enhanced by the remarkable work which the author has himself done to bring about that awakening. To a civilized nation of the present day the applications of science are a necessity. But in answer to the question so often asked, which is the more important to the world, pure or applied science, we have only to say that, to have the applications of a science, the science itself must exist. Our country has been able to record its great development in applied science, "only for the reason that there are certain countries in the world where pure science has been and is cultivated, and where the study of nature is considered a noble pursuit; but such countries are rare." In our own, as in most of the countries of the world devotion to pure science with earnestness of purpose and singleness of heart requires a moral courage which but few possess. But for generations there have been a few, a noble few, who have esteemed the study of nature the highest of all pursuits. And to these men the world owes all its progress due to applied science. This work, this searching into the laws of nature, has but begun. "Shall our country be contented to stand by, while others lead in the race? Shall we always grovel in the dust, and pick up the crumbs which fall from the rich man's table, considering ourselves richer than he because we have more crumbs, while we forget that he has the cake, which is the source of all crumbs?" The time is ripe for this country to take a higher stand than that shown by its past record, and the signs of the times point most encouragingly in that direction.

The curse of our country has been mediocrity, and that curse still

weighs heavily upon us. We have more than four hundred institutions calling themselves universities or colleges; more than are possessed by all the rest of the world. If the multiplication of these can be averted, and the wealth and energy devoted to higher education be concentrated and applied to the maintenance of colleges and universities worthy to be called such, the gain will be incalculable. Our institutions must teach thoroughly the sciences into which they introduce young men; for "it is useless to attempt to advance science until one has mastered the science." Our standards of comparison, too, must be changed. As long as we compare ourselves with mole hills we shall be satisfied with insignificance, or at most, mediocrity. It is only when we compare ourselves to the mountain that our real littleness becomes apparent, and our real desire to grow begins. In the great work of advancing science all can help. If we cannot be geniuses ourselves we can point them out to others; and we can have high ideals, and instil them into those with whom we come in contact.

LEVI L. CONANT.

Suggested Reforms in Public Schools, by C. C. COTTERILL, M. A., Assistant Master at Fette's College. Edinburg, 1885, pp. 178.

British public schools are the product of the genius of Dr. Arnold, and have existed in their present form about half a century. Hardiness, robustness, healthiness which is etymologically the something as holiness, is the end. There is no salvation for nations or individuals unless lives are made simple and hardy, and there is nothing but disease, decay, death,—physical, mental, moral and spiritual, in luxury. Change into flannels and a minimum of one hour's exercise out of doors in all weathers should everywhere be required. A school which had just offered a scholarship of 50 pounds for five years beginning at the age of seven, and thus seeming to require a preparatory school, is the text of much vigorous writing against the "plague spot of brain competition." The mere athlete is half man, half beast. The mere scholar is half man, half ghost. The tuck shop must be suppressed or the food it sells controlled. Only fruit and bread and milk should be sold between meals. Boys must be regarded as something more than mere brain-examinees. They shrink from being examined on books they really love, as a sort of profanation.

University Extension, by SYDNEY T. SKIDMORE, Lippincott's Monthly Magazine. Oct. 1890.

Twenty-eight hundred millions of capital are engaged in education in this country and none of it is available after the limits of youth are passed. Most of it is wasted in forcing children. Education should not stop short in youth but should extend through life, and diplomas be won part by part gradually, and not at once. The bank of learning should accept small deposits and not big ones only. Midday, holiday, evening schools, lectures, readings, etc., should gradually close in on the leisure left by shorter hours of labor, and on the time spent on the street and in idleness. Mental should not be apart from and still less opposed to bodily culture. The serapion and athenaeum represented the age of dialectics, ecclesiastical schools faith, the heavenly reason; but the new era now dawning is based on economics, and is incompatible with the scholastic scheme. This better mental fabric is not made in mind schools, but in experience schools. Professional education is not in harmony with the new universal education. Chautauqua has one hundred thousand members, and manual training school, Colleges, are reservoirs of knowledge and their selfish dams must be pulled down. We need canals for irrigation. All this is not pedagogic communism.

Year-Book of Scientific and Learned Societies in Great Britain and Ireland, etc. London, 1885, pp. 231.

This is the second issue, compiled from official sources, and also gives

titles of papers read in 1889, in 14 departments of research. The first edition contained a concise history and account of the organization and condition of membership. Between six and seven hundred societies are described in these convenient pages. Law, medicine, and even photography, agriculture, horticulture, naval science, etc., are included. The Royal Society and the British Association lead off. The latter made 36 grants of its money mostly in sums of from 50 to 500 dollars to further scientific investigation, and set its seal of approval and recommendation on 17 others. Most of the societies are small and entirely local, having no rooms and but very few papers. This number is significant for the diffusion of scientific and literary interests.

The International Scientists' Directory, S. E. CASSINO, Boston; p. 205 and 286.

This contains names, addresses and department of most scientific men throughout the world, arranged alphabetically by countries—in all some 12-13,000, and is a very convenient hand-book. Even South American states and out-lying islands are represented. The omission of a few great names is noted, but the number of amateur collectors, photographers, as well as doctors, taxidermists, instrument makers, dealers in scientific material of all sorts, is yet more remarkable. Error in the direction of too much is better than paucity.

La Decadenza dell' Università Italiana. Prof. T. MARTELLO. Bologna, 1890, pp. 138.

This inaugural address, printed with many enlargements, is a brochure of great suggestiveness. In the present period of national resurrection his country should shine by the glow of its own genius and by no pale reflected light. His motto is *ab imis fundamentis*. He can sound the alarm of university decadence as members of the council cannot whose indifference to educational institutions is often profound.

Greece represents education to citizenship by fatigue of body and mind, but ancient Rome was based upon education which first in history under Vespasian was at state expense. He gave 100,000 sesterces annually to professors, among whom was Quintilian, who had Pliny and Tacitus for pupils. The municipality sustained schools and prepared youth for the toga virilis. Neither Augustus Tiberius nor the later emperors neglected superior seats of learning, many of which became famous and were aided by government favors. Jurisconsults were often made state secretaries, and provincial governors, praetorian prefects, and the imperial power of Augustus was greatly enhanced by literature. Pliny said *Scholasticus est, quo genere hominum nihil aut sincerius, aut simplicius, aut melius*. Rhetoricians followed victorious generals, and mental followed close on the heels of military conquests. After conquering Britanny, Agricola brought the sons of native chiefs to school to learn Latin and to become impassioned by Latin eloquence. After the conquest of Gaul by Cæsar the famous school of Autun was founded. Eloquence and the schools made Roman unity, moulding races of most diverse customs and beliefs, joining their interests and making them submissive. In Africa, Dacia, Pannonia on the Rhine the school was the secret of Roman supremacy. Upon it, amidst their greatest perplexities, the rulers chiefly relied, as did primitive christianity, though at first hostile. The most difficult part of Charlemagne's task was his attempt at intellectual regeneration. When, in a chaos of corrupt dialects and barbaric races, papacy and empire contended for supremacy over the corps of the old civilization, *Roman law*, the only tradition of the past, was a rock amidst the waves of anarchy, and at last, after A. D. 1000, with the gloss of Irnerius, and the University of Bologna as its organ, kindled a new light and was the center of crystalization for the modern world. In a peculiar sense then Bologna is the cradle of superior studies, and

it revolutionized the laws and economic institutions of the whole world. Municipality and university were the two original forms of association, acting and reacting on each other like cause and effect. It was the classic time of Italian democracy, and in a true democracy knowledge is chiefly revered. Both stand for freedom and strength, individual initiative and personal responsibility, in a word, common law. Thus the classic period in Italian history is this, when communities and universities were developed, both typical, both spread over Europe, both together engendering the true spirit of nationality, as well as the renaissance. Only demagoguery, the barbarisms of ecclesiastical law, and absolute monarchy later crushed out the spirit of both science and municipal liberty. Most universities grew local and servile instead of universal and free, schools and sects arose. Theology became disputatious and peevish and dimmed the clearness of scientific insight. The universities of Venice and Piedmont stood out against inquisitions and the popes. The first had a history behind it, and had long been the constant and jealous care of the Senate, who intrusted its government to the *triumviri studiorum*, or *moderatores academici*, or Reformers of Studies. In Piedmont E. Filibert intrusted the new university to nine Reformers, and later had the splendid *Magistrato Riforma* strengthened and constitutionalized. It was from this centre that the nucleus of Italian unity unfolded, just as Prussia, which had the best universities, became the nucleus of German unity. In Germany, where the national flag has always hung in the sanctuary of science, universities, which have lately been created or strengthened to mark or complete victories, were formerly erected to repair defect, and in 1807, when Fr. William III was awaiting at Memel Napoleon's permission to return to his capital, he promised Schmalz to create the University of Berlin to replace lost military power by greater intellectual power. After Sedan an eminent Frenchman, Geo. Cogordan, said, "The intellectual superiority of Germany, which was a thousand times more formidable than her arms, must be entirely attributed to her excellent universities." The feeble French Academy of Strassburg, Germany, was made into a model university, the first cost of whose buildings alone was \$5,000,000. Universities are the soul of institutions and laws, and exercise an amazing moral influence; they are the pantheon of traditions, the crucible of ideas for an entire nation. They lead every intellectual movement.

The Swedish reverence for universities is almost superstitious. Russia is becoming a great emissary of culture for Eastern and Southern Asiatic races, and is basing its national life more and more upon higher education, thus laying deep and sure foundations for populations and wealth in Siberia and Tartary, and of constitutional government for itself. In our age of great colonial enterprise and energy, Holland forbids schools in Java and keeps the people almost in slavery. England established 50,000 schools and three universities in India where 90,000 govern 200,000,000.

The only European state which does not give important or even serious attention to its universities is the new kingdom of Italy. Her science once offered a refuge to powerful intellects which politics excluded from the world of action. Universities were forts where arms of revolutions were forged. Italian reformation was a movement which started at the top of culture and worked downward. France has anaemia at the extremities (for the faculties are in no way scientific but only professional) and apoplexy at the head. Mr. Bonghi has urged the unique American idea of giving the control of the university to those who are not part of it. Austria is praised that she did not found a university at Trieste to cement her conquest, and so is the former Austrian university at Padua. Even the German plan originated in Italy.

The present sad state of Italian universities is shown by the refusal

of some smaller provinces to permit their students to attend larger ones in other Italian provinces, or to receive those from outside. When all else was dead in these centres save the freedom of university life and love of country, it was from these that new Italy sprang 30 years ago. Now mild ameliorations have brought stagnation so that "we were better off when we were worse off." University laws overlap, are very complicated and voluminous, contradictory, often change, etc., so that constitutionalism is but a name. In some points the conflict of laws takes universities back to a papal bull as the only solid authority. Ill-framed ministerial circulars, blind bureaucratic caprices and abuses, elaborate provisions for impossible exigencies, failure to repeal obsolete or dead-letter laws, decrees, or edicts, make anarchy in university administration. Chairs are no longer inherited but are very often given by favor and not merit. Some scholarships virtually come from the pocket of the professors. The state forbids political societies, but they abound among students. At Naples agents of the professor sometimes bribe new students to inscribe in courses they will not hear because the state pays matriculation fees to the professors, some of whom have a large income from fees but give no instruction. Some provincial universities have but five or six students but a relatively large income, so it is jestingly said they are turning into banks. Much is often spent on novelties. The eight chief universities should receive all the care of the government and the rest be left to die. Professors should be less often selected from high schools. There is far too much freedom of election in studies and much time is lost by taking first what should come last. The "carnival life" of a student, which lasts four or five years, usually ends in a degree however unworthy he may be. Since 1877 only 10 professors can belong to the National Chamber, but several commissions make much draft upon his time. The ignorance, sloth, and superficiality of many of them is incredible. They are mere routine office holders, while others give their entire health, time and lives to laboratory and museums, clinic, library, etc., and know no other world. The scandalous Books of Attendance make attendance seem 100 per cent. when it is not above 33. These things all favor arbitrariness.

The author recommends: I. That all technical, professional, agricultural, and other superior schools be incorporated with the university. This would reduce expenses and bring new life. II. The provincial universities that seem to exist only for boarding-house and shop keepers should be suppressed. Their degrees now have very little value. III. The legal status of the university should be totally reorganized. Prussia at a time when the finances were greatly reduced, appropriated for the nascent university of Berlin a sum equal to all then spent by France for all its superior establishments together. The body of students is finally exhorted to free science from thralldom to utilitarian ends, to make literature more respectable, criticism less negative, laws less confused and equivocal, and a national economy in education less wasteful.

Das Schulwesen Italiens, besonders die Realschulen Italiens im Jahre 1878, von DR. MAX STRACK. Bielefeld und Leipzig, 1878, pp. 80.

At this date everything seemed to Dr. Strack to point toward a second renaissance in Italy, but everything was in a state of transition and nothing was firmly established. His pamphlet begins with a sad picture of the state of education in Italy during the preceding 10 or 15 years. School houses were small, badly lighted and ventilated, and very repugnant to the out-of-door habits of children of this sunny clime. Some of them were without seats, and in others children must be packed so closely together that their morals sometimes suffered in consequence. Parents needed their children to help at home, feared they would learn to despise them if educated, or objected to have their daughters taught to read, lest their inflammable fancy should be kindled by romance, or to

write lest they should learn to commit to paper their own ideas and sentiments. The clergy did most of the teaching, imparted only the most mechanical training of the memory, and strongly opposed real modern ideas as pernicious fruits of the tree of knowledge. The Suez canal, which put Italy on the sea path to the east, did not arouse the energy to profit by the opportunity. Its soil and climate are propitious, but tools, though not perhaps as primitive as in the day of Cincinnatus, are anything but modern. As silver from the new world enervated Spain, so now travelers and their wealth retard the indigenous development of the country. The people were poor, and the government had little means, but local princes co-operated, and between 1861 and 1866 the number of schools and pupils in one province more than doubled, and over 1,800 new schools were established in Italy in six months. In 1877 the government made attendance between the ages of six and nine a legal duty, adding another year for backward pupils, but permitting good ones to leave earlier. Compared with Germany salaries were small.

Real schools, under several names, were established by the comprehensive law of 13th November, 1859, by Minister Casati, first in Piedmont, Sardinia and Lombardy, and then gradually elsewhere. These schools comprise two grades of three years each, have no Latin, even in this land which inherits it and where it is so strongly clung to in the *Gymnasia* and *Lycées*, but in public institutions the catholic religion was to be taught by a director named by the minister. The lower grade of three years constitutes the *scuole tecniche* and is an institution by itself, as is the upper three years called *istitute tecniche*. The schools must be in cities of 20,000 inhabitants and be supported mainly by them, although the state may aid to the extent of paying half the salaries. The institutes belong in the cities of 40,000 inhabitants, and may also be aided by the state, but their courses are more specialized to fit the local industries. All professors, both titular and regent, as in all secondary schools, are permanently named by the king from the list of eligibles, but lower teachers—institutori and incaricati—may be named by the local board for one year. In the schools instruction is free, but in institutes there are entrance and examination fees. The diploma of each grade opens certain public offices. In 1878 there were in all Italy 63 royal schools of this kind, 88 of equal rank or with full courses, and 159 free or partial course schools, and 72 institutes, of which 41 were royal, and most of which had all four sections. All of these 382 Real schools save a few in northern Italy were established by the kingdom. This, says Strack, deserves the laurel of praise even from Germany which traces the history of her Real schools back to Hecker and 1792.

Raccolta Completa di Testi di legge, Decreti, etc. Dott. Bruto Amante.
Roma, 1890, pp. 470.

This second triennial volume of official regulations of all kinds touching public instruction covers the years 1887-8 and 9, and presents a convenient general view of education in Italy from the government standpoint. There are now 16 universities under state control, as follows: Bologna, Cagliari, Catania, Genova, Messina, Modena, Napoli, Padova, Palermo, Parma, Pavia, Pisa, Roma, Sassari, Siena, Torino, not counting the four free universities of Camerino, Ferrara, Perugia, Urbino. The administration of these, including rectors, secretaries of several grades, beadles, involving 93 officers, costs the state 345,000 lire per year. The Superior Council of Public Instruction, of which the minister is president, now consists of 21 members, all appointed for seven years by the king, of whom five at least must not be instructors. This body is divided into three sections, for the three grades of public education. All rectors are nominated by the king, and their functions, as well as those of inspector, local administrator, etc., are not very unlike similar functions in France, described in the first number of the SEMINARY. The

Universities are still under the fundamental law of Casati, Nov. 15, 1859, to which are appended many exceptions and amendments. Besides the Universities the naval academy at Livorno, the military and civil academies at Napoli, Firenze, Milano, Roma and Messina, the royal military academy at Torino, and the school of Forestry at Vallambrosa, which are all schools of higher or academic grades, are described. In the Licei Italian, Latin and Greek, and in this order, claim the student's chief time.

Statistica dell'Istruzione Secondaria, e Superiore. Roma, 1889.

This publication of the Ministry of Agriculture, Industry and Commerce, covers the scholastic year 1886-7, in which there were in Italy 735 gymnasia and 326 licei, with 58,000 students. There are 493 institutions for secondary technical instruction, or one to about 57,727 inhabitants. The 17 government universities, counting Sassari, contain 15,196 students, and the four free universities in all 345 students. In all there are 633 professors. To three of the licei certain university courses are annexed. Medicine has most, and law, science, letters, less students, and in this order. Venezia, Bari, and Genova have superior schools of commerce, Firenze of social science, Ferenze and Roma higher normal schools for women. Portici and Milano higher schools of agriculture. Torino an industrial museum. There are 32 larger libraries of which 12 are directly under the government.

Stato di Provvisione della Spesa, etc. Roma, 1887, pp. 255.

This statistical hand-book is published by the minister of public instruction, and shows a grand total for education of 40,510,744 lire. Of the universities Naples received most from the government for the year, 207,700 lire, and Cagliari least, 18,592. Of the colleges of music, Milan takes the lead with 37 professors. Fifty-nine normal schools have altogether less than 1000 students of both sexes.

Guida de' Comuni e de' Maestri, 2 ed. 1890, pp. 253. Dott. Bruto Amante.

This very digest presents a convenient picture of normal and elementary instruction in Italy from an administrative standpoint, and is greatly needed in the very confused state of educational legislation in Italy. Programs, pensions, buildings, obligatory attendance, inspection etc., are all included.

L'Université de Bruxelles. Notice Historique Faite à la Demande du Conseil D'Administration. Par L. VANDERKINDERE, Professeur à la Faculté de Philosophie et Lettres. Bruxelles, 1884. pp. 216. Annexes pp. CCXVIII.

This historical sketch was made just as the ultramontane crisis was impending on the occasion of the fiftieth anniversary of the University of Brussels, which was founded Nov. 20, 1834. The last 218 pages contain only names of past and present members, among whom are many persons of distinction. The first part is a somewhat dry chronicle of events which derive their chief interest from the prolonged and reiterated struggles of this liberal university, whose motto is progress, with reactionary and catholic influences which centre in the neighboring University of Louvain, probably to-day the highest grade of all catholic educational institutions. To quote a summary and concluding sentence: The University "began its work at an epoch when scientific work had not yet begun in Belgium; the practical utilitarian spirit which is peculiar to the Belgium people did not at once open a field proper to efforts of pure science. But little by little ideas were enlarged, disinterested research began to be loved, and it came to be understood that a nation has no moral grandeur if it cannot make in its heart a place for the love of truth." German professors were imported to enrich the Belgian patri-

mony, who, not content with preparing men for practical life, made disciples, till now national schools and practical courses have taken root. The history of education in Belgium during the first half of this century is very dark; even the official report of 1853 said, "Scientific life does not exist in Belgium." The object of the catholic university founded at Malines in 1834 had been defined to be to extinguish all doctrines that did not proceed from the apostolic see, and it was to offset this influence that the University of Brussels was founded by the liberal party the same year upon the initiation of the Free Masons led by Verhaegen. Subscriptions were invited and poured in from all the country. In less than two months 459 subscriptions came, amounting in all, however, to only 25,000 francs. The city of Brussels then generously subsidized the nascent university, gave it a building, while the council opened to it all hospitals, collections, public lecture rooms, etc., in the city, and it was placed under control of an administrative council of which but two professors could be members. This was the simple constitution of the first university in Europe due entirely to private initiative. The law could not give it a civil personification. Beside the catholic university which required a solemn and formal profession of catholic faith of every professor, was thus founded an asylum of science, pure, free, independent, where patient, attentive, conscientious research, disengaged from all alien preoccupations and interests, could make permanent conquests of human knowledge. In addition to medicine, law, letters, and science, which existed in the other universities, the council created a fifth faculty of administration and politics. A legal education did not seem sufficient for political leaders. In 1849, 1857, and 1876 important modifications of the organic law were made, establishing private docents, re-constituting examination juries, new chairs, etc. Brief biographical notices of the 200 professors who have held chairs in the university during its existence, and also the names of the original subscribers and founders are given.

Rapport Triennal sur l'Etat de L'Enseignement Moyen en Belgique, présenté aux Chambres Législatives, le 13 Décembre 1886. Onzième Période Triennale 1882, 1883, 1884. Bruxelles, 1887, pp. CLXV and 248.

Since 1850 these reports are presented triennially, and this eleventh report is largely occupied with an account of all the many new measures put in operation by the transforming law of 1881. The next triennial report is now awaited with interest. At the beginning of this period there were 10 ancient royal atheneums, and 12 new ones created by the law of 1881, and three new ones were organized at Ostende, Thuin and Ixelles. Twenty-five are not too many for a growing population of over five million and a half. Besides these there are 85 intermediate schools for boys, 56 for girls, two superior normal schools, and 16 miscellaneous schools, or 164 in all, an increase of just 100 institutions of this class since 1778. In 1884 the pupils of all the atheneums numbered 5,781, and of the intermediate state schools 15,045, the commercial colleges 534, and the patronized schools 902, a slight decrease in all four since 1882. The state middle schools for girls had increased about ten per cent. The number of gratuitous admissions has steadily increased.

The law of 1881 divided the atheneums into four courses: I. Pure humanities with two modern languages; II. The same with one; III. Makes Greek obligatory only in the first year and is largely scientific; IV. Makes Greek obligatory for two years, but is otherwise mainly industrial and professional. This change permits these conservative institutions to approach the Real schools. Over 1,500 out of 1,900 boys chose the full course of ancient languages,—an illustration of the same *élan et ressort* that led Scotch and English boys, according to the remarkable books of Demogeot and Montuci upon secondary schools in these countries, whenever an hard and an easy course were placed side by side,

first to hesitate and then always to choose the harder. The indigenous language of the province, whether Walloon, Flemish, or German, is always not only protected, but favored. The government not only confers degrees, but decorates distinguished professors and teachers as officers and chevaliers of the order of Leopold, and even gives to retiring prefects the right to retain the title of professor, and an old law of 1831 requiring all instructors of higher grade to take an oath of office has been revived and enforced. The government has opened its depots of archives and manuscripts to the rhetoric classes (which include history and literature), and a simple course, which begins with exhibiting bulls, charters, seals, letter patents, etc., has been developed, the stimulating effects of which are made the subject of a report. The department of public works has also in a sense opened its secrets to the select youth of these choice national schools. Teachers' conferences are so carefully prearranged and so well conducted that often the decrees of the king, the orders of the minister and the laws, and the principles and conclusions of these little pedagogic conferences are printed in the government reports. 7,500 francs are distributed as prizes for pupils in complimentary courses, and there are also 17 special prizes. Private institutions may be aided by the state if they accept the government program and submit their rules and books to inspection. The government council selects a list of text books after careful scrutiny, and from this list printed in their report each teacher is free to select. There are two normal schools designed to qualify higher teachers in these schools, that of the humanities at Liège and that of sciences at Gand, and four to fit teachers for the younger classes, at Bruges and Nivelles for young men, and at Liège and Bruxelles for young women.

Rapport Triennal sur la situation de L'Instruction Primaire en Belgique, présenté aux Chambres Législatives le 28 Mars 1889. Par M. DEVOLDER, Ministre de L'Intérieur et de L'Instruction Publique. Quinzième Période Triennale, 1885, 1886, 1887. Bruxelles, 1889, pp. CCXLIX and 762.

This ponderous volume is devoted to the financial, administrative and pedagogic details of primary schools during the preceding period of three years. Statistics of each district and canton are given. Inspection extends to all schools and all branches except to courses in religion and morals. There are special inspectors for middle work and gymnastics. The number of normal schools was reduced in 1866 from 28 to 16. In 1887 there were 8,198 teachers in these schools, all of whom had a full normal training and had taken the teachers' oath required since 1831. There were 4,015 commercial schools and 1,476 others adopted or subsidized by the state. The central council publishes a catalogue of text books approved by them from which the teachers can select, also a list of books admissible for school libraries and which may be given as prizes placed in normal school libraries, and 25 sets of approved maps, charts, etc., for school use. Adult courses, temporary courses in drawing, pedagogic conferences, pensions, widow and orphan funds, etc., present no points of salient interest to those familiar with the systems of France and Germany.

Conseil de Perfectionnement de l'instruction primaire. Bruxelles 1883. pp. 79.

This contains the laws regulating the composition and work of the Belgium council which has charge of primary education. The council was established on its present basis by the law of July 1, 1879, and is composed of six chief inspectors of schools and eight lay members named by the king, each serving three years and re-appointable. The annual meeting is in April. They must examine and approve not only school library books but all text books, and those which may be awarded as prizes,

give advice on programs, methods and illustrated apparatus, and on all other matters submitted to them by the minister. They can consider only such books and illustrated apparatus as may be submitted to them by the minister of education, and their reports upon these must be in writing. The expenses of the council are defrayed by the state and they are given a permanent secretary. Their annual report contains a catalogue of approved books, and a full and often interesting and valuable report on programs.

Entwicklung und Gestaltung des Belgischen Volksschulwesens seit 1842.
Von DR. M. LAUER. Berlin, 1885. pp. 194.

By the fundamental law of 1842 the schools of Belgium were placed about equally under the control of the state, the commune and the church. By the law of 1879 the state was made essentially the master of them, the commune given only duties and the church excluded. The law of 1884 entrusted the public schools to the commune, gave the state only the inspection of them and the church the possibility of co-operation. Normal training was by the law of 1842 the joint work of state and church, by that of 1879 of the state alone, by that of 1889 of the state chiefly, but aided by both province and commune and possibly by the church. This little volume contains only the texts of these three laws, the last of which is much the most detailed and valuable.

Annuaire de l'Université Catholique de Louvain, 1890, pp. 419 and XCVIII.

This voluminous report of what has been called the highest grade Catholic University in the world is full of interest. After the indulgences given its members by the Pope, and the calendar of saints and a prayer to the holy virgin who is the patroness of the University, the personnel of the Episcopal body of Belgium under the archbishop of Malines and of the university comes the report of the heads of the many departments of the university, the scientific and medical departments of which appears very strong and modern. Notable among them is the department of normal training for ecclesiastics who are fitting for secondary teachers, the agricultural and brewery departments. Only Catholic students are admitted, theatre going is forbidden. The vast old college of Alne is now devoted to the American seminary (1861,) which is for those intending to become missionaries in North or South America. A visit to this seat of learning is full of interest, instruction and surprise.

Ministère de l'Instruction Publique. Recueil des Lois et Arrêtes relatifs à l'Enseignement Supérieur. Bruxelles, p. 374.

This is a complete collection of all laws, edicts and decrees in force each year regulating the two state universities of Gand and Liège, covering all the sixty subjects or departments, the appointment and pay of professors and other instructors, special rules for clinics and laboratories, examinations, degrees, discipline, the constitution of the *conseil de perfectionnement de l'enseignement supérieur*, the examination jury, etc.

Ministère de l'Interieur et de l'Instruction Publique. Annuaire statistique de la Belgique. Vingtième année, 1889. Tome XX. p. 365. Bruxelles, 1889.

In the four Belgium universities there were in 1888, 5,860 students, of which Bruxelles had 1,795; Louvain, 1,727; Liège, 1,470, and Gand 838. Since 1890 the student population has increased from 37 to 98 per 100,000 population. School statistics are here presented in only a summary way and occupy but about fifty pages.

Loi du 15 Juin 1881. Appartant des Modifications a la Loi du 1er Juin,

1850, sur l'Enseignement Moyen. Documents et Discussions Parlementaires. Bruxelles, 1882, pp. 354.

This is an history of this important law. The state of intermediate education before is first described, and this is followed by the story of the inceptions and early drafts and later modifications of the law with the parliamentary discussions in full.

Ville de Bruxelles. Rapport fait au Conseil Communal en séance du 7 Octobre, 1889, par le Collège des Bourgeois et Echevins en exécution de l'article 70 de la loi du 30 Mars, 1836. Bruxelles, 1889, pp. 275.

This contains a condensed and largely statistical report on the educational institution of the city from the university down, about 50 pages in all.

L'Abeille. Revue Pédagogique pour l'enseignement primaire et l'enseignement moyen du degré inférieur, publiée avec la collaboration de plusieurs hommes d'école.

This monthly journal is now (1891) in its 36th year, and is edited by Th. Braun, state inspector of normal schools. It publishes official announcements, careful digests of the contents of the foreign pedagogic press, in every European country, in both Americas and even Mexico.

Anuario de la Seccion de Instruccion Publica correspondiente a 1889. Santiago de Chile, Imprenta Nacional, Calle de la Moneda No. 112. 1890. pp. 381.

This report of the minister of justice and public instruction contains official curricula of primary, secondary and normal schools, commissions and instructions of delegates sent to Europe and elsewhere to study special phases of education, new rules for the anatomical museum, medical prosectors and libraries, nominations of a commission to create a physiological institute, members of the national pedagogical congress, of commissioners to perfect the organization of astronomical and meteorological observatories, of new members of the national council of public instructions, diplomatic correspondence to import German professors for the new pedagogical institute at Santiago to train principals and teachers for secondary schools, which already has twelve instructors, the new national library with 28,000 readers in the year, the 29 Lycées, three lower normal schools with a three and four years' course, the 1,097 public schools with a population of two and one-half millions, etc. The university of Santiago is under a council of 14, presided over by the minister of public instruction, and has five faculties, one of laws and political sciences, and one of philosophy humanities and fine arts, in addition to medicine, theology, and physical sciences and mathematics, and in all 151 instructors. The astronomic observatory and the national museum pay their directors five and four thousand dollars per year and have a generous corps of assistants.

Congreso Nacional Pedagógico. Resumen de las Discusiones, Actas i Memorias presentadas al Primer Congreso Pedagógico celebrado en Santiago de Chile en Setiembre de 1889. Publicacion Oficial Dirijida por DON J. ABELARDO NUÑEZ. Santiago de Chile, 1890. pp. 274.

Ten sessions, of a day each, attended by about 170 delegates officials and others from all parts of Chili were devoted to the following subjects, one day each:—Manual labor, reading and writing methods, aid of schools by their alumni, music, military exercises, hygiene, how to enforce primary education, country schools, night and adult schools, how to improve the professional training of older teachers. These meetings had unusual point and vitality because several of these subjects were discussed on the basis of a detailed programme drawn up by a com-

mittee or by the government, the specifications of which were discussed and amended like a bill in congress, and even where this was not the case the most practical plans were discussed by the essayist with a view to their immediate application in the rapid development of the school system of that country. D. Hurtado's plan of teaching history even in upper grammar grades almost entirely by monographs, biographies, battle-descriptions, each written according to an exact plan, was favorably reported on. The essays are all brief, and usually summarized in a series of theses. The decree of the Junta convoking the meeting specifies not only each subjects but the questions to be discussed or answered under each, the place and length of the sessions, form of publication, etc.

Memoria del Ministro de Justicia e Instruccion Publica, presentada al Congreso Nacional en 1890. Santiago de Chile, 1890. pp. 368.

The pedagogical part of this annual report is made up chiefly of reports from the heads of higher institutions and of statistics of primary education. Considerable space is given to the new medical school and the national conservatory of music and declamation. The progress since the corresponding reports of 1888 and 1889, is commendable. The new observatory which is described at length in the report of 1888, is beautifully located, surrounded by zoölogical and botanical gardens, vineyards and nurseries. This, like each institution, has its organic law. The minister had been largely occupied during the year with the aid of law professors in codifying the laws, especially in making out a criminal code, and in perfecting prison organizations. The admirable compilation entitled *Recopilacion de Leyes y Decretos de Interés General vigentes en 21 de Mayo de 1888.* Santiago de Chile 1888. pp. 806 is soon to be revised.

Revista de Instruccion Primaria. Publicacion Oficial. Destinada al Fomento de la Educacion Popular. Santiago de Chile. Juan Madrid-Casilla 170.

This review of primary education is a monthly journal now in its fifth year, each number contains about sixty pages and is the central organ in Chili. The pedagogics of Tolstoi, religious training, educational journalism, pedagogy, methods in geography, arithmetic, reading, history, normal schools, manual training, psychology as applied to education, the pedagogics of Sarmiento, reports of associations, etc., combine to make the two last numbers before us, admirable models to North American educational journalism in this field. The most noteworthy trait about these articles is their seriousness and the evidence of wide reading and careful study they present. Chili now, with her excellent university and her lower school organization incomplete, is a good illustration of educational influences working from the top downwards.

Etude Geographique, Statistique, Descriptive et Historique des Etats Unis Mexicains, par ANTOINE GARCIA CUBAS. Mexico, 1889. pp. 411.

Nearly all the states in the Mexican confederation have adopted the principle of free and obligatory education. In all thirty of them together there are 10,726 primary schools and over half a million pupils. There are more than twice as many boys as girls; there are 16 secondary schools for girls, 16 preparatory schools, 19 schools of law, 26 seminaries, 9 medical schools, 8 colleges of engineers, 31 Lycées, 1 mining school, 4 schools of fine arts, 2 of agriculture, 2 of commerce, 7 industrial schools, 3 conservatories of music, 1 school for the blind, and 1 for deaf mutes, 1 military college, 2 naval schools, and many normal schools. In all these institutions are 18,500 boys and 2,500 girls. There are 23 libraries, the largest of which has 150,000 volumes.

Estudios Sobre Educacion Moderna. Organizacion de Escuelas Normales por J. ABELARDO NUNEZ. Santiago, 1883, pp. 341.

First part contains chapters on normal schools in Massachusetts, New York, Philadelphia, Germany, Norway, Sweden and Denmark, and a concise account of the international congress at Brussels. The remainder of the book is devoted to studies on moral education, discipline, pedagogy and manual training with a chapter each to industrial and agricultural education, mathematics, physical sciences, reading and writing, geography and history. The influence of Herbart Spencer and of the United States is predominant throughout, and the author's argument on the necessity of a knowledge of reading and writing is unanswerable.

Escuela Normal.

The account of the dedication exercises of the normal school in Santiago, Chili, in 1888 contains a list of laboratory apparatus, and of professional books in its library which may be referred to as a model of what every such institution should contain. Both books and apparatus were maturely selected from the best European sources.

Memoria del Ministro de Justicia culto e Instruccion Publica, presenda al Congreso Nacional en 1886. Santiago de Chile 1886. Imp. Nac.

This report contains the plan of the new normal school of Santiago, a description of the equipment of the new physical laboratory and reports over 900 students in the university, with a steady increase during a series of years, save in the department of law, which still has nearly two-thirds of the total number. In Chili it is thought to be a cause for congratulation that law students are decreasing. We hope soon to have access to later reports.

La Instruccion Publica en Estados Unidos. Ensayos sobre su orijen i estado actual por FRANCISCO GONZALEZ ERRAZURIZ con un prologo de Carlos Walker Martinez. Santiago de Chile 1881. pp. 136.

This book was the result of long and patient study and it gives an excellent bird's eye view of the state of education in the United States from the kindergarten to the university, and shows great familiarity with our best writers, and important tendencies.

Pedagogicheskiy Mozey Voenno-uchebnuy zavedeniy, 1888-9, and 1889-90.

These two impressive volumes in the Russian language are the 20th and 21st annual reports of the pedagogical museum of St. Petersburg, edited by Vs. Kohovskiy. This museum, now in the 28th year of its existence, reports during the past year 109 conferences, 58 lectures for soldiers and the common people, 14,000 persons making use of its collections and material, 161 popular classes in sacred music, and elementary training, one exposition of children's toys and games, and 120,000 visitors, of whom 21,312 paid admission. Its reports of conferences and other meetings, of pedagogic researches, and its digests and criticisms embrace such points as text books and all school supplies, systems of illumination and ventilation, and hygiene, discipline, fatigue and overpressure, writing and drawing, tobacco, children's food, primers, etc. These subjects are commonly treated by men of the highest ability and accomplishment. As favorable illustrations of the thorough way which the museum inspires and directs we mention the prolonged studies of fatigue in school children begun in 1877 and now in that most interesting stage when, in the words of Gorinevskiy, it is at last fully realized in Russia that this subject must be subjected to a yet far more thorough discussion if the grave errors of occidental nations are to be avoided. Of this work very little save the studies of Sikorskiy have been translated into west European languages. This work has been carried on by

Madame M. Manasiena, and especially by Prof. P. A. Litvinskiy, Galanin and others. Litvinskiy studied the social amusements of children. One-third of the 24 hours of most children is unoccupied, he premises, save by amusements. On the basis of an extensive study of the plays and games of children he divides their recreation into eight classes and assigns each its place according to age, health, and educational end attained. It is bad for children to play with adults. The sports of the common people are, as a rule, not helpful for them. Perhaps his most important conclusion is that the value of amusement is in general inversely as the number of participants. The school has a larger choice of recreations than the school festival, and the family larger than the school. Family allows more room for personal, initiative, and more liberty of frequent change so that there is less danger of over-excitement and abandon in playing. There should never be prizes for games. Chums, and close companionship with a few, rather than crowds, should be the rule; plays are grouped as follows: those for children less than eight years of age, those for from eight to 15, and from 15 to 21. Nervous and physical debility, said Galanin, are now growing from generation to generation, and complex as are its causes, one of the chief is doubtless over-fatigue in school. Methods, not programs, make school-work hard. If the near sighted, headache children, and those who lose in school the habit of deep breathing were dropped, and if children were not over-fed to the point of confirmed indigestion and far beyond their needs for mental development, most of this evil would cease. One specific problem now under investigation is which class of schools and which grades fatigue most. The method is complex and seems well adapted to the end. It consists in general of collections of 100 words each, and each set of these collections adapted to one of the seven grades of schools. In general, fatigue is inversely as ability. In intermediate schools one grave error is that many pupils reach them too poorly prepared to follow the courses readily. To mitigate this evil a society for gratuitous tutoring has been organized in connection with the pedagogic museum, which aids such backward students wherever the museum will provide rooms and the necessary books. The toy exposition held last year attracted, says A. A. Ysaev, collections of over a million rubles value. It had long been planned, but only when the manufacturers rather than sellers of toys were appealed to was its organization effected. Native Russian toys which are admirable in pedagogic quality represented a large industry that was threatened by a growing fashionable preference for prints and French and other foreign toys.

The late Professors Kedrov and since, Demeankov and Tarkhanov have elaborated a comprehensive plan for gathering statistics as to the present and subsequent effect of school life upon health, incited thereto by the two international pedagogic conferences thereon in Brussels in 1876 and 1880. These statistics should be on a plan internationally approved and be exchanged for mutual benefit. Professor Zelenskiy insists that mind is an organism like the brain, only its chief development comes after the brain stops growing. So it is not a function of brain. He deprecated the tendency to separate or contrast mind and matter. Like organism, conscious mind has its natural history, its periods of growth and decay, its diseases, etc. Education is movement. Stillness in school stultifies.

In an article on discipline it is said that interest in school work should be the means of all discipline. Only as interest declines does discipline become apparent. Both discipline and teaching may be excellent, yet entirely without education, monotony and tedium is the cause of most offences against school order. *Per se*, discipline has no educational value whatever.

Mlle. Valitzka, and later Dr. Virenius published in the museum ar-

chives a valuable study of the effects of tobacco on the organism of young children.

Since 1714 the orthodox clergy of the national Greek church have had practical control of religious education in primary schools. These orders of Peter the Great were modified in 1803, 1878, 1864, '74 and '84. Now it is urged that the entire control of primary schools be given up to the clergy, and that parochial bodies and often church buildings be the centre of all, and that the government concentrate all the care upon intermediate, special and advanced schools. The government has given the clergy great power already, and seems inclined to regard them as the natural teachers of children and the people. Theoretically in most provinces the clergy can now teach all, and the priest may transfer his right to others but must oversee and attend examinations. A proposition has just been made to teach church history before forms and services of the church, and make the catechism the crown of religious teaching and restrict the latter to one year. Against this it is urged that two years is hardly sufficient for the latter, and that knowledge of church services should not be left to higher grades while some would exclude all religious instruction from schools and have it given in the church.

A valuable article by P. Th. Kapteer, (suggested possibly by Hauffe *Entwicklungs geschichte des menschlichen Geistes* '78), distinguishes between qualities like credulity, idealism, self-confidence, timidity, extreme idealism, etc., which are outgrown in children and perhaps entirely lost, and others like comparison, curiosity, criticism, etc., which develop and are abiding. If the culture of the first is neglected, the energy of life is lowered and it is monotonous. If children die young they lose the pleasure they have a right to, and they are less happy in old age. If abiding qualities are neglected there is lack of discipline and strength. Precocity, especially in the knowledge of good and evil, brings disenchantment and apathy. A good education balances the needs of the present and the future.

A program of the professional course in pedagogy in the royal normal college connected with the museum in St. Petersburg may be abridged as follows: A. *Physical*. I, air, its analysis, windows, dust, breathing, ventilation, etc. II, heating, stoves, fire-places, steam, normal temperature, etc. III, humidity; IV, light; V, privies; VI, school diseases; VII, school furniture. B. *Psychology*:—The nervous system, attention, feeling, habit and custom, memory, imagination, conception and imagery, senses, anger and kindness, fear, content, will and discipline, love and disgust, ennui. C. *Didactics*: branches taught and methods. D. History of Education, with special emphasis on chivalry, Montagne, Ratisch, pietism, LaSalle, Fellenberg, Rousseau, Pestalozzi and Diesterweg.

Educational Maps of Russia.

The largest map published by the Minister of Education in 1876 in four large sheets has not been superseded. Each of the hundreds of sub-departments or counties, including the 16 Siberian districts, is distinguished by 14 shades and colors, according to the number of inhabitants to each child actually in school, between the extreme of one in four to one in 1458. About the Black Sea and in the western section, especially in Poland, and even in Finland, the proportion is best, ranging from one in 20 to one in 45 to 60, but in the mountains, in the central and northern and eastern parts the proportion is very small, from two to four or five hundred being not uncommon. Russia has improved greatly since this map was issued, but the difficulties of very sparse population, and the resistance of many half-barbarous and rebellious tribes are by no means overcome. The same map shows also the total number of primary government and non-government schools, the cost per school and per pupil of the latter. The whole is a model of lucidity.

The other smaller map (1 metre square) published in the same year, shows the higher and middle institutions under the ministry of education, and unlike the first, has been translated into German. Between 1866 and 1876 the number of universities and other higher institutions increased from 8 to 18, and of intermediate institutions of all kinds from 272 to 540. In Siberia the number of these institutions had increased in this period from 12 to 32. Peculiar to Russia are the Tartar at Kason and Ufa and Hebrew teachers' seminaries, and jurisprudential lyceums for those who wish the inferior examination in law institutes, for living oriental languages, and historic philological institutes.

Verslag van den Staat der Hooge, Middelbare en Lagere Scholen in het Koninkrijk der Nederlanden, over 1888-89. 's Gravenhage, 1890, pp. 458.

This is one of the most systematic and complete of reports, and covers the entire field of higher and intermediate instruction with maps, graphic and colored charts and statistical tables collected and arranged according to the best methods of statistical science. In all these respects it may be commended as a model to our Bureau of Education. Between 1857 and 1862 the Dutch communes nearly trebled their outlay for high schools, and although the government increased its contributions in nearly the same proportions as late as 1878 it gave but 1,030,000 florins out of a total of 7,073,000. For the next five years the state increased its subventions till in 1883 they reached 6,623,000 out of a total of over 15 million florins. Nearly all the communal increase since 1876 that has not later fallen off, was made at two rapid strides in 1882 and '83. In 1888 the communes paid nearly seven out of a total of over 11 and one-fourth millions. In the twenty years ending 1888 the total number of pupils of both sexes in all these institutions, public and private, had increased from 380,000 to 635,000, and the increase in the special, has been greater than in the public schools, and is due much more to girls than boys. A map of illiteracy for each of the *circa* 100 school *arrondissements* show in three outlying districts over 20 per cent. of the population unable both to read and write according to the severe tests of the Dutch law. Concerning each of the universities, Leiden, Utrecht, Groningen and the new institution at Amsterdam, the information is no less complete than concerning gymnasia, progymnasia, higher normal, burger, industrial, and other secondary schools. Not only the number of students in each of the five faculties of each university, but the lecture fees and the length of time each has spent at the university—sometimes eight or ten or even more years—are recorded. The largest number of students in each university is in medicine, and law comes next, far leading all others save at Groningen. In all Leiden had in 1888, 744, Utrecht 569, and Groningen 383 students. Each course announced or given in 1888, the examinations undertaken, those passed, degrees, fees, brief notes concerning each laboratory, prizes, etc., are all given due space, but the university budgets are not here detailed, as they are in the case of the thirty-five gymnasia, progymnasia, the sixty-one higher burger schools, etc., with, for the most part, a five year course.

Annario Estadístico de Instrucción Pública 1889, Madrid, 1890, pp. 409.

Spain is divided into ten university districts, in each of which is an university which is the center of its educational system. These are Madrid, Barcelona, Granada, Oviedo, Salamanca, Santiago, Sevilla, Valencia, Valladolid and Zaragoza. At the head of all these is the Minister of Public Instruction Excmo. Sr. D. José Alvarez de Toledo y Acuña. Conde de Xiquena; under him is the Director General, Ilmo. Sr. D. Vincente Santamaria de Parades, and under him six administrative officers, each in charge of universities, institutes, fine arts, libraries and museums, middle and primary instruction. A national council of education consisting of 36 members has general advisory functions, not unlike

the general council in France. The Royal Spanish Academy, and the Royal Academy of History, the R. A. of Fine Arts, of Exact Sciences, of Moral and Political Sciences, and of Medicine, are all well organized and present an impressive array of names and titles. The university districts are organized with 59 institutes, and 480 incorporated colleges, besides normal—48 for women and 34 for men—and lower schools on a plan not very unlike the system of France. The expense of the public education in all 10 of the university districts combined is nearly two million dollars, of which nearly half is supplied by the state. In the 10 universities there are 38 faculties, fitting for 28 careers, besides 30 professional and 19 special schools. The public schools number altogether 24,703. In the higher education 31,079 students are enrolled; in all kinds of professional schools 86,152; in all secondary schools 70,000.

Memoria Presentada al Congreso Nacional de 1890. Buenos Ayres, 1890, Three vols., pp. 454, 597 and 536, by DR. D. AMANCIO ALCORTA.

These voluminous pages contain the education laws, decrees and edicts relating to justice and public instruction. The regulations of each of the 17 national colleges, and over 20 normal schools representing secondary education, and finally of the university and special schools of high grade are described.

El Real Colegio de San Ignacio de Loyola vulgarmente Colegio de las Vizcainas en la Actualidad Colegio de La Paz. Resena Historica Escrita por Enrique de Olavarria y Ferrari e impresa por acuerdo y con la aprobacion de su junta directiva. Mexico, 1889, pp. 244; appendix pp. 130.

This is a history of one of the most important catholic colleges of Mexico. The corner stone was laid in 1734. Its architecture and its beautiful church and court are medieval and cloisteral in form.

Racherehes sur les mouvements chez quelques jeunes enfants. BINET. *Revue philos.*, Mars, 1890.

La perception des longueurs et des nombres chez quelques petits enfants. BINET. *Revue philos.*, Juillet, 1890.

Perception des enfants. BINET. *Revue philos.*, Décembre, 1890.

In these three papers (see fuller review of the first in the *American Journal of Psychology*, vol. III, p. 273) Binet reports experiments and observations upon a number of children, but chiefly upon two little girls, sisters, one between two and three years old, the other between four and five. The first paper shows that the first movements of walking are instinctive and not acquired by imitation; that spontaneous movements in very young children are almost exclusively bi-lateral (both members being moved at the same time, or first one and then the other); that the motions of children are less rapid and less abrupt than those of adults; that there is a suggestive resemblance between some automatic actions of children and the automatism of double personality cases.

By the experiments reported in the last two papers the author found that the skill of children in comparing the length of lines is great; that their ability to recognize number before they can count above three does not extend beyond five or six; that they connect the color red with its name before other colors (these experiments should be compared with those of Preyer and Wolfe, mentioned above in the note on Studies of Language of Children); that they easily see the significance of pictures representing known objects in their totality, but not that of representations of parts of known objects, (the same is true with the recognition of emotion in pictured faces except apparently for laughing and crying, in both cases because the child is unable to analyze his perceptions); that the backwardness of the child in using personal pronouns is not wholly a matter of imitation but partly due to real lack of a discrimination of his personality; that at four years and a half a little girl

can give some account of her dreams, and does not wholly confuse them with reality; and lastly that in replying to questions (e. g., "What is a knife?" "What is a box?" etc.) the child is most attentive to the use of the thing, and, in the case of physical sensations like hunger and thirst, to the means of satisfying them.

The papers present many interesting details, but perhaps their chief merit is that they represent an attempt to substitute experiment for casual observation in a field where experiment has as yet been little employed.

E. C. S.

Über Geistesstörungen in der Schule. Ein Vortrag nebst 13 Krankenbildern. By CH. UFER. Wiesbaden, 1891.

The pamphlet begins with an historical sketch of the development of psychiatry of children, mentioning particularly Griesinger, West, Güntz, Conolly and Emminghaus. Is it necessary for the pedagogue to learn something of child insanity? Pathology is simply physiology of the sick, said Wunderlich. Nay, still closer is the relation: physiology is the science of both healthy and sick, sickness being only a condition not so common as what is called health. This connection is most of all apparent in the case of the mind. Without going so far as, with Lombroso, to identify genius and insanity, we can readily understand that they are both abnormal conditions of mind. Between the normal operations of the mind and the phenomena of idiosyncrasy, insanity, mania, etc., there are continuous and gradual transitions. A person who is familiar with asylums can detect at once the faint symptoms of unsoundness of mind in children, whereas others would never notice them. By far the larger part of mental disturbance in children is due to bodily complaints; a good proportion of these can be cured, whereas, if left unattended to, cases of incurable disease will arise. Just these cases are never taken to the physician until too late; the parents are ignorant or blind; the whole depends on the intelligence and education of the teacher. Some children are all right so long as little effort is required and go to pieces under strain. Others try to work but are unable to prevent vacancy, staring and mind wandering. Some are sensitive, obstinate, tearful, explosive in anger, hard-hearted to other children or animals, or go to the exact by opposite extreme. Some are inert, and others mercurial, restless, ever active but purposeless. One boy cited, if he hit a stone must hit it twice again, and if he made a blot he must make two more, or if he spelled a word wrongly must misspell two more before he could correct it, and was unable to repress these imperative impulses, which impel others to shout out bad words despite the strongest wish not to do so. Such cases must not be confused with laziness, or obstinacy, nor must morbidly sensitive children be made weak minded by overriding their feelings. The cases given are very interesting and instructing. The rudiments of morbid psychology must be taught to teachers. Colleges and normal schools should substitute in the place of the current college philosophical mythology (as worthy the name of science as alchemy is to be called chemistry) a substantial laboratory course in experimental and observational psychology. Every teacher should have had such a course in the psychological and neurological side of these studies, and should know something of the typical forms of mental and nervous diseases, especially in children. Stated visits to a paediatric clinic would do him no harm. Nothing can be trusted to the parent, and the fate of such border-line cases often lies entirely in the hands of the teacher.

SCRIPTURE.

A Report on the Examination of 100 Brains of Feeble-minded Children, by A. W. WILMARTH, M. D., Alienist and Neurologist, Oct. 1890.

The 100 cases are summarized: Sclerosis, 25; degenerative changes,

not true sclerosis, 15; hydrocephalic, 5; general cerebral atrophy, 2; non-development, 16; infantile hemorrhage, 1; adhesion of membranes from old meningitis, 3; of 31 cases where actual disease or imperfect development of the brain proper was not demonstrated, there was hypertrophy of skull, 6; acute softening, 2; demi-microcephalic, 2. Attention is called to the large number of cases of actual cerebral disease, in contrast with the relatively small number where imperfect development is the cause of mental defect, and to the improbability of most of these cases ever attaining a full mental development, though many can be greatly improved. Children inheriting inactive brains from parents below the usual average of intelligence, without history of infantile disease or epilepsy, seem the most promising of general and permanent improvement.

The Growth of Children. GEO. W. PECKHAM, M. D., Teacher of Biology, Milwaukee High School. Report of Wisconsin Board of Health, 1881. pp. 28-73.

The investigation was undertaken in the schools of Milwaukee, under the auspices of the State Board of Health. The data were similar to those obtained by the Mass. Board of Health. The measuring and weighing were done under the direction of the principals of the schools. Observations were made on over 5,000 boys and 5,000 girls. The results are given in a dozen charts of curves and twenty pages of statistical tables. Dr. Peckham prefers averages to means.

1. Comparative rate of growth of the two sexes: Boys are taller until the twelfth year, and heavier until the thirteenth; between thirteen and fifteen the girls are both taller and heavier; after the age of fifteen the boys excel the girls in weight and stature; girls nearly cease to grow at about seventeen years of age.
2. Race, as affecting height and weight: The American boy or girl is taller than the German or Irish; the German has a slight advantage in weight; the rate of growth of Germans is markedly modified by residence in this country through one generation; in inter-marriage between Americans and Germans the offspring seem to take the height of the taller parent.
3. Effect of climate and density of population: School children in Milwaukee are taller than school children in Boston; the weight of boys in Milwaukee is greater than that of boys in Boston; the Boston girls are slightly heavier than Milwaukee girls. Dr. Peckham quotes Baxter's tables to show that climate does not influence height except as it affects food and mode of life, and ascribes the superiority of the Milwaukee children as compared with the Boston children to the degree of density of population in Milwaukee as compared with Boston. He concludes that the height of American-born men, as shown by his tables, is apparently more modified by the conditions accompanying density than by all other influences, race excepted; urban life as compared with rural life tending toward a decrease of stature. The forces here referred to act at all ages from five years upward.
4. The rate of the growth of the body and the lower extremities: The length of the body of the girl is less than that of the body of the boy until the tenth year, and thereafter greater until the sixteenth; from fifteen to eighteen the bodies of girls grow only two inches, and the bodies of boys over four; for the lower extremities, at nine years those of the girl are longer, at eleven shorter, and from eleven to fourteen again longer; at fourteen the lower extremities of the girls almost cease growing, while those of the boys increase by four inches between the ages of fourteen and nineteen.
5. The table of yearly and half-yearly increments in height and weight shows an excess in growth during the six months from May 1 to Nov. 1, either the long vacation or the season of the year being favorable to a more rapid increase in height and a striking increase in weight.

REIGART.