

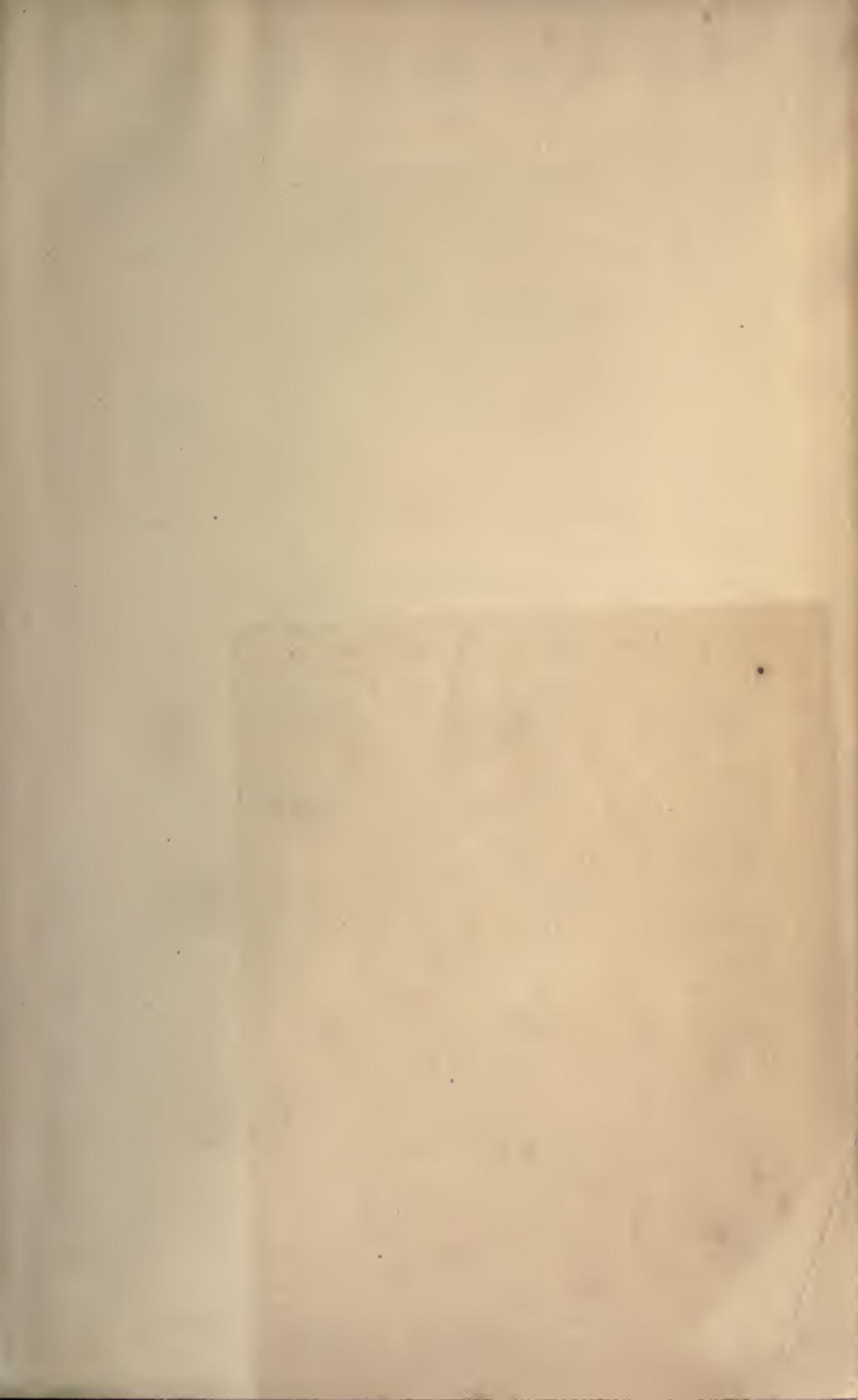
CONSCIOUS

MOTHERHOOD

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“ Where there’s movement, where there’s action,
For the child’s eye there’s attraction!
Where brightness, melody, and measure,
Its little heart will throb with pleasure.
Oh! mothers, strive to keep these young souls fresh and clear,
That order, truth, and beauty always may be dear!”

PART I.

CONSCIOUS MOTHERHOOD;

OR,

THE EARLIEST UNFOLDING OF THE CHILD IN THE CRADLE,
NURSERY, AND KINDERGARTEN.

BY

EMMA MARWEDEL.

SUPPLEMENTED BY

PART II.

EXTRACTS FROM PROF. W. PREYER'S PSYCHO-PHYSIOLOGICAL
INVESTIGATIONS ON HIS OWN CHILD, CALLED

THE SOUL OF THE CHILD.



BOSTON:

D. C. HEATH & COMPANY.

1889.

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BY EMMA MARWEDEL.

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Dedication.

TO

MISS ELIZABETH P. PEABODY,
Introducer of Froebel's System to America,

G. STANLEY HALL,
*Professor of Educational Science at Johns Hopkins University
and Harvard College,*

AND TO THE MEMORY OF

MRS. HORACE MANN,

I DEDICATE THIS RESULT OF MY LIFE-WORK IN THE CAUSE
TO WHICH WE ARE ALL DEVOTED.

THE AUTHOR.

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PART I.

Conscious Motherhood;

OR,

THE CHILD'S EARLIEST UNFOLDING IN THE CRADLE, NURSERY,
AND KINDERGARTEN, PRACTICALLY ILLUSTRATED.



PREFACE.

IN the year 1876, in sending my kindergarten and normal class work from Washington, D. C., to the government exhibit at Philadelphia, I gave utterance to a long-cherished conviction of my own, that the ball, as representing the sphere, the type of all life, was not made sufficiently prominent in Froebel's development of the child.

Ever since that time — now a decade — this conviction has been active within me, until I have at length wrought it out, with the full force of my reason and experience, to a practical result.

I do not wish, however, to create the impression that my theory is an entirely new one; the fact being rather that it extends and systematizes the idea of the curve contained in Froebel's teachings, and which was so clearly suggested by W. Guillaume at the International Educational Congress at Brussels, 1880.*

By 1882, my thoughts were so far crystallized that they were ready to be presented in the tangible form of, "A Circular Drawing System, or Childhood's Poetry and

* See Henry Barnard's Child Culture.

Study in the Life and Forms of Nature." (Supplemented with a botany and seventeen classification charts of four feet square, in relief.)

The North American Froebel Institute, meeting at Detroit in 1882, to which able body I disclosed my plan, gave me its unqualified approval, and urged the speedy publication of my work in a series of resolutions, which had, however, been anticipated by the indorsement of such prominent educators as Profs. Eugene W. Hilgard, G. Stanley Hall, and Joseph Le Conte, to whom, on account of their intelligent sympathy and their friendly and active co-operation in my plans, I can scarcely exaggerate the expression of my gratitude. And I cannot omit acknowledging the practical kindness of the Chicago Free Kindergarten Association and the Board of the Pioneer Kindergarten Association.

The resolutions referred to were as follows : —

Resolved, 1st. That while we, as professed disciples of Froebel, deprecate all departures from the great fundamental principles laid down by him for the culture and development of the child's nature, yet we hail with delight all discoveries of new applications of his philosophy, whereby we can better adjust its force to the educational wants of the age, believing that truth has all-sided growth, and an adaptation suited to the changed condition of its subjects; therefore we welcome with pleasure the application of the curved lines representing all forms, vegetable and animal, as embodied in the system just brought to our notice by Miss Marwedel, of San Francisco, thereby giving larger scope and greater pleasure to the chief

thought, while tracing the handiwork of the Master Builder of the universe.

Resolved, 2d. That the committee, feeling that an extended knowledge of Miss Marwedel's application of Froebel's method will be of great use to children in the school as well as in the kindergarten, urge the publication of her book, which will also contain directions and suggestions to use these forms, and, if necessary, that the North American Froebel Union be requested to assist Miss Marwedel in any way in its power.

Resolved, 3d. That a committee be appointed to confer, if necessary, with publishers of Miss Marwedel's book.

In pursuance of the third resolution, a committee on publication was appointed as follows: Miss Elizabeth P. Peabody, Mrs. Horace Mann, J. W. Dickinson, J. M. B. Sill, and W. N. Hailman.

But with all this encouragement, supplemented as it was with the logic of my development of the curve, and by W. T. Harris's argument, I was still unsatisfied. I felt that I had not yet touched the right spot in human existence, whereon to base the fair structure of human education. Thought upon thought drove me back over the steps the human being traces in his ascent to manhood. I reached the home, the mother, the cradle! Here, at last, in the mother, to whom Froebel dedicated the first use of the curve, I found the place where the corner-stone of any genuine education must be laid. But where to find that stone which should become "the head of the corner"?

A remarkable book — the first of its kind in range and

profundity — fell into my hands at this period. It was the work entitled "The Soul of the Child," by Prof. Wilhelm Preyer, of Jena; received by me as a providential answer to my question. And this book, which answers, not my question only, but every query as to the when, and the how, and the wherefore, which mothers and all other educators ask concerning the earliest physical, mental, and moral needs of the child, seemed to me a boon which should not be willingly withheld for one single hour from those upon whom are laid grave responsibilities from the first day.

It has been a difficult and a necessarily imperfect task to extract from a strictly scientific work such portions as would best serve to enlighten and direct the mother in her double function of nurse and educator; but I felt that, however roughly the stone might be hewn, it was nevertheless the needed corner-stone, without which the superstructure could not be erected.

Another Kindergarten Congress and Exhibit, at Madison, Wisconsin, in the summer of 1884, brought my Circular Drawing System again before the public, and showed such renewed interest as gave promise of general adoption. The Chicago Free Kindergarten Association and the Cook County Normal School (under the principalship of Col. Francis W. Parker) induced me to give explanatory lectures on my Circular System of Drawing, a task which I performed with delight, as I had become fully assured of the instructive pleasure

and creative impetus imparted by this method to children, even from the age of four years.

This completes the history of this volume of my work. The third and fourth parts are but the natural and logical result of the other two, and will follow as soon as possible. Having found the cradle to be the right spot wherein to begin education, a knowledge of the nature of the inhabitant of the cradle was found to be necessary to that beginning. This presupposed a knowledge of the mother and of motherhood, which make the first and second parts of my work. Thus the book in all its parts leads, like a circle, back to its starting-point—from the commencement of life in the child to the creation of life in the mother.

But the task, as a whole, is one I should not have ventured to undertake, were not the book, after all, *The Child's Book*, and its creation due to my living with children.

It reflects the many sacred hours spent in watching and directing the unfolding of their budding souls, and in loving study of their educational needs. It reflects also a thousand divine sparks of childhood's purity, poetry, righteousness, and reason; its devotion to duty, and its hitherto so much unappreciated altruism. My inspiration in writing this book has been, *sympathy* with the mother in her immeasurable responsibility; the condition of *childhood's rights to justice and happiness*; and finally, an abiding faith in the mental and physical evolu-



tion of the race. So let me hope that it will lead the mother and the educator, as it did me, inward to the depths of the nature of the child, and onward *with* the child.

EMMA MARWEDEL.

SAN FRANCISCO, May, 1887.

P. S. — This seems to be the proper place to express my most deeply felt gratitude to those who crowned my work in its embryo with their sympathetic co-operation and faith, in the spirit of true sisterhood. They are my two most unselfish acting revisers, Mrs. M. G. Campbell and Mrs. A. I. Toomey, the late Mrs. Horace Mann, Miss E. P. Peabody, Mrs. Robert Fowler, Mrs. A. P. Kelley, Mrs. E. G. Greene, Miss Kate Atkinson, and many others; not to undervalue the document of the Woman's Christian Temperance Union, promising to favor my aim of awakening

“CONSCIOUS MOTHERHOOD.”



CHAPTER I.

DEVELOPMENT OF CONSCIOUS MOTHERHOOD INTO ITS IDEAL, "SACRED MOTHERHOOD."

- I. Introductory. — II. Woman as a Mother and first Educator : (a) Among the Ancients; (b) Among her Contemporaries. — III. The Growth of Woman's Social Responsibility.

I. INTRODUCTORY.

OF all that connects man with life, that is, his inner with his outer world, the child stands nearest to him. It reflects the sacred unity of manhood and womanhood no less than the unity of his own manhood and childhood. National customs and festivals, the tributes, joyous or solemn, dedicated to the child at its birth, are in keeping with the poetry and the ideal of the age. They measure the stage of progress of man at each period. The child is man's civilizer, purifier, and redeemer. The child's first mission opens with its helplessness, which is its great silent claim to be saved from the evils under which it is born, and from which it suffers while passing through life. There is the same unspoken appeal, whether the child be placed on the soft pillow of fine linen, in the subdued light and aroma of luxury, or whether it be on the worn-out, old-fashioned quilt on the stormy shores of the sea, or at the foot of the rugged mountain; this is the appeal for

a recognition of its rights to a natural development of its higher being. Conditioned by numerous limitations, such as rank, custom, religion, etc., man unconsciously becomes the type of his time. How the portrait of the man who shall typify our race will look on the pages of history we shall not know, for our eyes will be dust when it is drawn; but we know that the characteristic of the nineteenth century is a craving for truth, an insight into the uniformity of organic law, and a growing courage to admit unflinchingly all its conclusions and applications. Man not only puts the almost invisible parasite and worm under the microscope, but he subjects himself to the same minute investigation.

With the higher education granted of late to woman, she has proved her capacity to compete with man for honor and for bread; but in doing this, she has only entered upon a general course of instruction which makes no provision for her special and natural vocation. For this vocation her training should embrace anthropology, physiology, and hygiene, psychology, pedagogics, history of law, and ethics, and finally a thorough course of Froebel's system, theoretically and practically. Some one, perhaps, will say this is too much science and elaboration for the simple function of motherhood.

We ask, Is motherhood simpler than eating and drinking and breathing? The preparation of our food is brought under the scientific analysis of the laboratory. The cutting and fitting of our garments are subordi-

nated to the principles of physiology. Ventilation, sleep, recreation, are presided over by science. Agriculture, forestry, fish culture, stock breeding, all are carried on upon scientific principles. Beginning with comparative studies of the life, habits, and heredity in the improvement of plants and animals; increasing knowledge of the laws of matter and mind as evinced in the complex operations of labor in an ant-hill; of intelligent obedience and co-operation in a bee-hive; of adaptation of means to ends in the beaver, the dog, the elephant, — all these form the ascending steps in the knowledge which is auxiliary to the anthropological science of man, and to right methods in human education. Are, then, the pre-natal formation of man, his first physical, mental, and moral unfolding, the harmony between his inner nature and the outer world, the integrity of his character, the education of his will, the early conception of the individual and social relation as a part of the whole, less valuable than cooking and breathing according to chemico-vital laws? Is the truth we seek for man the only truth exempt from scientific requirements? Is woman's moral and physical relation to her child not to be adjusted by the same laws which control the universe, from the star to the atom? Love will not let itself be harnessed in a yoke with Science, but Affection and Duty are willing to sit at its feet and learn, and woman must reach toward the ideal through the practical. She must learn to glory in her real relations to

a real world, rather than in those that have existed for her in sentimental ignorance, poetry, and chivalry.

The poetry of all ages has deified the wife and mother, making her the sole spring of all life and earthly happiness, the source of man's strongest and purest emotion and thought; and the union of the mother and child has been crystallized into the symbol of all that is divinest in human nature. So nourished, it is little wonder if the young girl concludes that this ideal love will solve every problem into which her relation to life brings her. Crowned by a world which lavishes in blind enthusiasm its tribute to the celestial beauty of veiled hope and devotion, the loving bride lifts every flower thrown in her path, accepts every wish that reaches her listening ear, every whisper of friendship, every pressure of the hand, as a token for telling the endless days of happiness and peace this love will bring her, with little return on her part save the instinctive feeling that she possesses a love which her dreams have idealized. But this is not the relation we seek for woman, this is not the front which the nineteenth century imperiously commands woman to turn to the world. Once she was called on only to be pure, to be good, to neutralize evil without knowing it, to bless man without understanding him. We assert that a negative purity is not communicable, that a passive goodness will inspire no one, and that in order to bless man she must know him. But she must also know herself; she must understand her God-ordained position

among the working forces of nature; she must understand the great and holy message which she and she alone can deliver to the world. She can no longer shut her eyes without guilt. If she has been mistaught hitherto, she has now the means of teaching herself aright, and a solemn weight of responsibility will rest on her henceforth if she does not fit herself for the demand on her intelligence, her energy, her proper conception of the world's progress and needs. But she must not think to do the highest work alone; it is as she joins herself to man in the interchange of virtues and in a reciprocity of strength that she will find herself most womanly, most motherly, most divine. We must rise above the old defining of "man's sphere, and woman's sphere," seeing in each only a hemisphere; in man and woman conjoined, the perfect sphere.

The most prejudiced judgment must admit that the highest individual types of mankind are found where the best qualities of both sexes are united in one person, be it man or woman. President Warren, of the Boston University, in recommending co-education, says: "If the aim be to narrow a human being to one small function, isolation will be found helpful. If the aim be semi-development of a human being, semi-isolation is by all means desirable. On the other hand, harmonious all-sided development demands harmonious influences from every side. Masculine influence alone, feminine influence alone, can never produce the broadest and com-

pletest human culture. Only in the full human society of men and women can a normal development of character go forward. Where mental and moral improvement is the earnest common purpose, the refining and ennobling influence of each sex upon the other in association can hardly be over-estimated. It is an elevating and molding force, whose potency and value have but just begun to be recognized in the higher education." And this is the force which, proceeding in orderly evolution, is to redeem us from our present one-sidedness, narrowness, and ignorance.

II. WOMAN AS A MOTHER AND FIRST EDUCATOR, AMONG THE ANCIENTS AND AMONG HER CONTEMPORARIES.

Considering the problems of civilization, nothing seems to stand more aloof from discussion than the idea of motherhood. Most savages revere the physical union existing between mother and child, while our civilization has generally subjected this natural oneness to unnatural social regulation. "Motherhood" is the ideal relation, remaining forever unchanged.

I regret not to be able, at present, to devote a part of this book to the historic anthropological development of conscious motherhood, but I hope before long to present a communication, proving that the primitive motherly emotions, by creating *comfort*, become the source of ethical civilization.

Among the Nicobarosians, a tribe very far from general civilization, while the wife is *enceinte*, a devoted care is lavished on her and even on her husband, both being freed from labor. They enjoy a life of holidays among their relations. Where they appear they bring pleasure in the simplest hut. The best pig is slaughtered to be eaten, and the woman requested to sow some seeds from which especial fertility is expected. The Somalis, a negro tribe on the shore of the Nile, exempt a pregnant woman from all labor, bringing burnt offerings to the gods for her well-being, and that of the child. The Carthaginians and Pannonians pay their highest respects and care to the coming mother, and the bodily strength and beauty of the Teutons must be attributed to the great estimation of the *special* rights granted to women at the period of the pre-natal life of the child. The superstition surrounding, at this period, mother and child evolved through all ages the most singular habits. This superstition hangs still and not seldom as a heavy cloud over our heads, and nothing can destroy it but a higher insight into motherhood. Mother's *love was* and *is* predestined to kindle the *lights* of life. Why, then, has not the mother of the present age, with this recognized power, reached the self-perfection she feels herself entitled to?

Let us try to find the reason for this anomaly.

No human mother is able to ignore the similarity existing between herself and the animal mother. The



heroic self-abnegation and ingenious, loving care in animals stand in some degree parallel to human love and human social organization. The power of leadership and protection to weaker ones, among the wandering birds and the elephants, not less among the horses, cattle, and buffaloes; their selection of *two* of the strongest animals on each side to fight for their disputed rights, instead of as with men, who fight tribe against tribe; the remarkable patriarchal system among the walruses; the co-operative actions of apes, of beavers, bees, and ants,—offer vast material for comparison; but these are exclusively for their own kind, and so far as we are convinced, without any distinct design to connect by reason, not by instinct, the past with the future, forming the ground of logical conclusion for further actions. And here we find the solution of the anomalies that prevented the growth of conscious motherhood. It rested on the error of accepting this instinctive power of motherhood as *complete* and sufficient on the error of narrowing her power to her own kind (family exclusion), and of preventing her from connecting by reason, not by instinct, the present with the future, for free individual conclusion and logical action; condemning her instead to dependence and ignorance of herself and her duties.

No woman in this great Republic is unaware of the changes concerning her own sex in the latter part of this century, and the question arises, Is this change the product of modern or the reflex of ancient civilization?

Woman's condition among the Hebrews, as a familiar subject through the Bible, has, in many respects, remained unchanged till to-day. The mother is highly honored in her special functions, and the uniformity of strictly kept family love and duties supports a moral condition which bears its recognized fruits. The historic record left us by the Egyptians and the Greeks widens in the same degree as nature and art freed the woman from her seclusion from the outer life to the high and vivid pulsation of *free individual creative forces*.

This is clearly demonstrated by their mythological figures and attributes, their festivals and literature. The conception of a humanistic individual statesmanship placed woman's value, as the bearer and raiser of the coming citizen, not only on physical but on intellectual equality with man, for the needed perfection of soul and body.

It is true, so far as we know, the boy remained no longer than seven years among the Greeks and Egyptians under the educational guidance of the mother, while the girl remained with her, in the inner part of the house, carefully restricted, though she was sent to school, the gymnasium, and lectures. But considering the care extended to the boy, placed under the constant educational supervision of the so-called pedagogue, and later watched over by the best men chosen for this act of honor and trust, to be trained for the duties and hardships of life, we can but admit that it was not so much the mistrust in

woman's power, but the aim to prepare the boy, from the outset, practically and morally for life, which separated him from the home. This is shown by not allowing the young boy to go on the market, preventing his early contact with the debasing phases of life.

A work of late by Jos. Cal Poestian, of Vienna, in Germany, aims to bring the female Greek philosophers—of whom he mentions more than one hundred by name and character—into an organic connection with the history of Greek philosophy and science, from which we give the following short abstract, as the author desires distinctly that his work might not be limited to his scientific brotherhood, but fall also into the hands of women, devoting a special chapter to the "courtesans." According to his statement, the position of women differed greatly in Greece. The women of the Dorians participated with men in literature, art, science, and statesmanship; for example, the poetess heroine Telesilla, by placing herself at the head of the Argioie, gained a victory over the invading enemies. The author refers to one hundred and forty-six distinguished women, six of them being painters. Many women were able to fill and they filled the chairs of philosophy held by their husbands, brothers, and fathers. The moral, elevating intercourse with the wise Pythagoras, his faith in woman's mental powers, are illustrated by the actions and writings of his wife, the philosopher Theane, by an educational letter showing the strong demand for developing early self-

control, about 500 or 450 B. C., and reads as follows : —

She was distinguished for her beauty, a devotional love to her husband, and her oratorical and literary powers. She says : "I fear you are spoiling your child by caring too sentimentally for it. Your intention is to be a *good* mother ; but, my dear friend, the first duty of a good mother is not so much to give passing happy feelings, as to lead the child to what lays the foundation for a constant happiness by virtue, — moderating and conquering, from the beginning, 'sensuous desires.' Therefore, be careful that your love and devotion does not play the role of a flatterer or destroyer, instead of a builder of its happiness through character. Children, from first babyhood allowed unrestricted sensuous enjoyments, will become unable to resist the temptation of lower pleasures, so great in after-life. Your duty is to educate your children by such means that their natural gifts are not turned in the wrong direction, which will happen when the desire for empty pleasure gains the upper hand in their souls and bodies ; becoming accustomed to enjoy only pleasant sensations, — a condition which leads to an excessive effeminacy of the soul and body, in opposition to moral efforts and labor. Consequently, nothing is more important than to create right desires as well as overcome what children *dislike*, even when, for the moment, they may not see the reason, and their feelings seem wounded ; for no better remedy exists to free them

from the slavery of their own passions of voluptuousness and aversion than being aroused to work, creating in them desire and esteem for all that is beautiful and noble. Therefore, pray reform the education of your children. Expose them rather to hunger and thirst, heat and cold, than leave them without habits of self-denial, self-restraint, and patience. The power of endurance of labor and submission to discomfort are for young human beings what a solution of alum is for cloth to be dyed purple, — the more it has been penetrated, the deeper enters the color of virtue. Any education which is luxurious and effeminate can produce no other fruit than frivolity and insolence, and the very opposite of every quality by which a human being becomes useful to himself and others.”

“If you nourish your children too richly and too lavishly,— constantly thinking how to amuse them, leaving them without restraint to continued frolics, allowing them to say everything they desire, and to do everything they like, fearing it might diminish their momentary happiness,— permit me to say, *you do wrong*. Allow me also to refer to the danger of an extreme bodily care. Compare the rearing of poor children with those of rich families, and judge for yourself. What will become of a boy who, when asked what to eat, only wants the best, and always wants his own will; when grown up, he naturally falls a victim to his own appetites and those of others.” The earnest consideration and

forethought in the letter of Theane, the Greek mother, brings her in full accord with the educational necessities and ethical views of the present, in spite of a lapse of almost twenty-four hundred years. Thus the philosophic and ethical culture and wisdom of her time, the power of debating and competing in wise and witty words and thoughts, were not the result of year-long book learning,—reading and writing was little taught,—but of free and constantly exercised nationally recognized oratorical gifts and oral discussions. In the same degree her husband, Pythagoras, influenced his disciples by moral inspiration for the highest virtues of man, so Theane, though co-education existed, directs special attention to woman's educational, social, and domestic duties. For example, "on the right direction of servants and others." The need of such unity in work with the husband, aiming to bind men and women to an *equal* devotion to virtue, still exists, finding its revival of late in the "White Cross."

The Greeks developed their highest culture of body and mind, of art and science, almost entirely orally. So did Theane, and in doing so, she used a gift which belonged through all ages to woman as a special talent. It comprises one of the highest privileges of motherhood; standing out forever in "mother's saying." In this sense, the power of woman became the oracle of man, and its leaders in justice and wisdom. Did she reach above her strength, or did she fall a

sacrifice to her earthly ideal? But it was her own voice, heard through the mouth of the oracle, which subjected mankind to a blind submission that brought man and foremost the woman finally under the fatal ban which keeps her to this hour. The oracles demanded "*submission without reason.*" The truth-seeking period of Greek creative philosophy gave place to submission to authorities. It brought ruin to the most lofty period of man's existence, smothering and blackening forever the transparent action of a creative, co-operative equality of the two sexes. Can we regain it? We will regain it by enlightened motherhood. We know of the Dark Ages, and its effect on woman, not less the religious fanaticism and its hateful cruelty; we know of the subsequent frivolity and its twin brother, the cynicism of the Middle Ages, till the morning light of the Renaissance played in our own glass-stained windows.

And we ask, What principles of independent responsibility, what conscious development of thought, what higher aims, were pointed out to the mind of woman, to nourish her inborn gifts and her devotional love to the family? On the other hand, how readily did woman answer to a special heroic act, to a special call on her talents, her enthusiasm for the right and beautiful; but her passiveness and lethargy being fostered, woman, as a whole, has not yet regained the position she kept among the ancients, her growth burst-

ing in flowers in individual, not national, perfection. And history is full of these single instances of woman's greatness. But they were exceptions; woman's existence, the origin of authority and fashion, was used neither CREATIVELY NOR CO-OPERATIVELY. "The house and the family" and "the world and mankind" became two great retarding divisions. Even more, it was declared that woman belongs to the house, man to the world. What then of the child, the product of both? Thoughts, experience, and the inspiration of woman began to search for truth.

Awakened from her winter sleep of blind submission to the past, she had to DEFEND herself for this AWAKENING. Requested to lie down again to sleep for her own and her children's sake, she became aroused to look at the world and her relations to a world in which she was ordained to bring life and continuity through the child she was bearing. For the sake of this child she read the history of the past; and turning her eyes from the present to the future, she began to feel the whole weight of being a responsible woman and *mother*. She found that, of all knowledge dealt out to woman, *the scientific knowledge of herself, her motherly function and her motherly duties*, have up to to-day been WITHHELD. Accomplished, learned, and led into the profoundest studies, inspired by art, but without any methodical preparation or instruction for the most difficult and important office, that of *motherhood*, save some advices of superior

mothers, and perhaps superficial insight into the physiological construction of herself, she enters the home of her coming child. She and the world learned, that to be a teacher needed years of training and preparation; but to be a MOTHER AND a *teacher* in ONE, at the most important period of child's life, was left to chance.

"What is needed to improve the education of our children?" asked Napoleon. "Mothers," was the reply. To which he answered, "That will comprise an educational system by itself." (*L'Education des mères de familles*," by Martin, is a book on this subject.)

Convinced of the irrepressible influence of women, the distinguished Sheridan planned a *National Woman's Education*, to be applied to *all women of England*. In presenting his plan to the queen, asking her to give it her patronage, he said: "It is woman who governs man; it therefore becomes our duty to perfect them as much as possible by education. The wisdom of man *depends* on the mental culture of woman. It is woman who dictates the laws of nature to man." This idea of Sheridan was grand, and if carried out, who knows what England might have been at present? Kant, the philosopher, referred all his powers to the first influence of his mother.

III. WOMAN'S SOCIAL RESPONSIBILITY.

We refer to some different conditions in the history of woman, and we refer once more to the time when "the

castle was her home"; when she wove and spun, cut, embroidered and dyed, the costly garments, with her maid, for the sovereigns of the land; when the humble knight drew up the iron drawbridge which hung between her and the outer world, who blew the bugle-horn at sight of her, bridled the horse to prevent her tender feet from touching the roughness of the mother earth and its soil, with its hard labor. The castles are gone, and the woman of to-day has to face the world as it is, and to walk the common street of life with a thousand others. What does she meet? Is it that youthful frankness and joy which knows no limits in its unconscious happy contentment with the wayside treasures of life? or does she meet with a conscious earnestness for the matured principles of truth and its higher gifts, free to all? The first she meets is the whisper: Do not trust this world; its glittering folds hide but pain and grief and dirt. Do not try to touch these veiling curtains. You cannot keep clean yourself if touching them. The world is not better fitted for you than one thousand years ago for your sister in the castle. Do not walk the common street of life; return to your home, and be silent. Who counts the million of women who pressed their folded hands closely over their burning hearts and eyes, in conflict with their inmost religious devotion and their unwanted love for all men, sent home to be *silent*? Who counts the million of noble women, whose endless love on account of narrowness, idleness, and emptiness

of the heart turned to vanity and selfishness? This time still hangs over us, but thanks to ourselves and social necessity, the spirit of the latter part of the nineteenth century begins to struggle against the ban of the past.

The woman of the nineteenth century begins to acknowledge the evolutionary forces retained by her passivity which have called her so suddenly to the front. She recognizes herself as the missing link, without which no sound fruit can ripen on the tree of life in human society. She recognizes herself as the missing element of affectionate motherly insight and care in the great household of man, in his laws and regulations, and in the most painfully neglected, lawful protection of her young. She recognizes herself in her moral responsibility, equally great, to the state, the family, and the school.

The truth thereby revealed to her is based on the following points: —

1. That woman, in its fullest meaning, is the other half of humanity.
2. That as such, she is an essential part in the well-being of the whole.
3. That her creative power lies in moral reforms.
4. That to accomplish this, science has to be made her ally.
5. That practical and theoretical preparation is necessary for this work.

On this basis, she *demand*s the necessary knowledge of the relation of body and mind, and their reciprocal influences on heredity, their relation to health, crime, and their sequences, morality and happiness. In order to save man, she has to study man.

Women have concentrated their efforts to action in common. Their organization may not yet be completed, nor is the whole ground covered with what lies before them, but the germ is sound. It is bedded in woman's moral strength in union. This germ will grow. Not as a work belonging to *one* nation, but to *all* nations. Not *one* class, but *all* classes. Not *one* sex, but *both* sexes.

No one can anticipate the fullness of the power of such an organized union in work finding its point of culmination in the higher conception of an *ideal motherhood toward a sacred parenthood*.

Its plea is urgent, as its platform broad. It will be called out by the clear voice of the thinking and the loving woman for the soul of her child. It is *from* the home and *for* the home where she was kept *silent* that her voice will rise in *divine inspiration*.

It is the truth for mankind that she demands where it is most needed, namely, in the true understanding of its nature. It is *her own fitness* which she *demand*s for the highest, the most powerful religious mission trusted to the hands of mankind, — *her fitness for the creation and unfolding of her child*.

CHAPTER II.

UNION OF BOTH SEXES IN IDEAL PARENTHOOD.

- I. Child's Creation before Birth.—II. The Increase of Crime, Insanity, Idiocy, and Suicide among Children.—III. What is told by Statistics.—IV. Unity in Parenthood the Nucleus of the Moral and Physical Perfection of Man.

I. CHILD'S CREATION BEFORE BIRTH.

* SCIENCE, busying itself always more or less intelligently about man as an object of study, has in these last days seemed to find the right key wherewith to unlock both the outer and inner courts of his nature. It has tried all keys, it has fumbled at all the locks of his many-doored and complex organism, and in deciding at last that the physiological key was the real pass-key to all the doors, science has but planted its feet in the "long untrodden way" used two thousand years ago by the Greeks, who, by means of object lessons on a grand scale, in the shape of art products in every form, the drama, pictures, statuary, architecture, oratory, gymnastics, in a word, every activity that could develop the human being, and every sort of knowledge that could reach him through perception,

* This paragraph was kindly furnished by my dear friend and reviser, Mrs. M. G. C.

managed to bring into being the most symmetrical race the world has ever seen. Why have we as a rule produced nothing like it since? Why have we had either disproportioned prodigies, or half-endowed organisms, or intellectual dwarfs in giant bodies, or giant intellects in inefficient bodies, or a varied imbecility and terrifying insanity? Dr. Seguin says (and his authority none will dispute), it is chiefly because women, — those sacred living cradles in which the human babe is rocked for nine all-important months, in which atom is placed on atom of that wonderful structure which is to become the dwelling of an immortal selfhood, — women are not rightly related either to their privileges or their duty. Their education has not kept pace with that recognition of their value and peerhood with man which is gradually taking place. Seguin says: "Their education is a jumble of that which has made all the male *mutilitus* we have known. Their hygiene and habits have disqualified them for motherly functions; their education has not taught them one iota of womanhood. How can a woman conceive and nurture, with a living enthusiasm, a child which has no room to grow, which she has no strength to carry, no substance to feed, no idea how it is to be handled, cared for, etc.?"

Does anybody suppose the Greek mother, to whom we must refer again before quoting further from Dr. Seguin's invaluable monograph, does any one imagine the

Greek mother could have given birth to those men of incarnate suppleness and grace, obedient muscle and balanced mind, all the organs acting with such functional harmony that melancholy and suicide were all but unknown among them, if the Greek mother had placed an unyielding wall of whalebone and steel around those parts where nature put a wall of the utmost flexibility and adaptation to the changing needs of its contents? Those beautiful waists, whose models have come down to us through the ancient marbles, appeal in vain to the silly, or imitative, or wilful women of to-day, who, without knowing the origin of the fashion, have followed the lead of fashion-setting courtesans. And how can we expect a noble race to be born of women who sacrifice first of all that attribute in which God lets them be most like Him,—power to create human beings, or in the word most used, their procreative power?

Seguin, after repeating, "The unborn child has no place to grow in peace," goes on to speak of the fact that idiots and feeble-minded children are much more numerous than formerly; and as this is a condition nearly always developed before birth, he asks, "What has happened to women, that, simultaneous with more freedom and more intelligence, they should breed a feebler progeny?" This question he answers with sad conviction, by declaring that women are, on the one hand, overburdened, are exhausted by their heroic efforts to aid their husbands (who have themselves, in these days of artificial wants,

undertaken more than they can do), that they have anti-physiological educations, and lead uneasy, feverish lives, owing partly again to their sympathy with their husband's speculations. "Women," he says, "who would, if secure in their homes, willingly raise a brood of loving creatures, now pray earnestly to God to send them no children to fear for." They suffer more than their husbands, because, after suffering with them, in head and heart, they add to this the anguish of their wombs, and this anguish it is which chills and dwarfs its fruit, when it does not render the womb itself entirely barren.

On the other hand, the inactive, useless, unreal lives of women of the class of idlers leave motherhood aside as a function incompatible with social gayeties, and the accidental and unwelcome products of such wombs are all unwarmed and uncheered by love and hope and tender emotions. The remedy lies in a return to physiological conditions, in a recognition of the mother's power to shape and mold her child, not physically only, but mentally and morally, before it is born.

The natural laws which determine such results are no more immutable in the breeding of a race-horse, an apple, or a rose, than they are in the production of a human being.

It is true, we are not yet able, in the case of the human being, so to ally ourselves with those laws as to make it possible to predict the result with such certainty as we may in the lower organic kingdoms. This

is because of the immense complexity of the stream of human heredity, and the sensitive condition of the pregnant mother who is subject to the thousand varying impressions of her daily life. One fact stands out clear, — the flood of light that is to-day poured on the working of natural laws, and our power to modify natural processes, increase our responsibility in a fearful degree.

When a mother is taught that the sensitive fluid, in which her unborn child is suspended, can and does convey to it every shock it receives by her; when she knows not only that her anger or her fright may cause the nervous system of the forming babe almost to dissolve, and turn it into an idiot or an epileptic, but that, on the other hand, she may decide his morality before he is born, will she not tremble in her eagerness to know how she must act in order that her child shall be brought into the world healthy, and with right disposition of soul, and balanced aptitudes of intellect? Unfortunately, the problem of how to give each child that sacredest birthright, the right to be well born, the world is not yet ready to solve in the only way in which it can be truly solved, the way in which it must be finally solved, viz., by right marriage; and so, for the present, we who wish to aid mothers must content ourselves with offering such help as will be accepted. And the following are some of the facts and principles which it will be helpful for them to know and to ponder, and faithfully to act upon. First of all, then, there is a duty we owe our children, even before their

conception; it is, that we should desire them, that we should preconceive with love and longing the immortal being whom we are to aid in fashioning for a life on this planet.

Then, from the instant that a mother knows herself pregnant, she should begin the education of her unborn infant. If, as every one believes, a mother may mark the child in her womb by some hideous deformity, by a sudden impression on her senses, so, conversely, may she mold it to symmetry and beauty of body and soul through constantly recurring sensations of an exalted kind. "In Vienna, when an heir to the throne was expected, the Empress was given in charge to a special directress, who would regulate all her actions and surroundings, in view of commencing the education of the contingent monarch, as early as the first evolution of the yolk-substance of the human egg." Here there is recognition of pre-natal education because it is the heir of the throne, and the child of an Empress. Has not every unborn human being a right to pre-natal education, being the "heir of all the ages," and the child of God? Alluding to the ancient Israelitish custom of permitting the newly married to live one happy year free from labor and necessities, Seguin says: "This was economy (to the state), since it cost less than the life-long support of infirm children born of ill-developed and careworn young women, who themselves hardly ever recover from the simultaneous drain on their constitutions of pregnancy, overwork, and moral distress." And he

goes on to say: "No wonder, on the contrary, that from the martyrs of the flat and depressing dramas silently enacted in our days for a miserable livelihood, are born children not only idiotic and epileptic, but insane; . . . insane before their brains could have been deranged by their own exertions; insane, likely, by a reflex action of the nervous exhaustion of their mother."

On the other hand, Seguin, as well as other earnest writers, deploras an indolent, purposeless life for the pregnant woman. He speaks of the inferior and deficient children born of "the endless siestas and satieties of the rich." If the child is to have good muscles, the mother must use her muscles; not to the point of fatigue, for that is bad for every one, but she must exercise them, for it is those organs and faculties which the pregnant mother actively uses that are most apt to be in fullest function in her offspring. Over and over again it has been proved, and but for fear of making this chapter too long, cases could be cited to show how, by the careful and conscientious use of her own powers, with direct reference to the molding of her child, a mother has produced the effect she most desired. Not by silly gazing at pictures, or by fitful wishes that her forming offspring should be thus and so, can the breeding mother hope to effect the object; but by being herself what she wishes her child to be, and that earnestly, steadily, patiently. Above all things, self-control, being one of the most priceless possessions of humanity, is the characteristic I would

entreat both the gestative and the nursing mother to cultivate. Instances could be multiplied where mothers, by giving way to ungoverned anger, have so poisoned their milk that the nursing babes were killed by it. One case that I recall was of a young woman, whose first babe had died from that cause; and who, knowing that fact, still persisted in giving the breast to a second child on one occasion when she had been passionately angered; and when that child also died, the wretched woman became a prey to conscience, and died herself in unavailing remorse.

How often must one combat the superstition that, unless a mother is gratified in every whim during her gestation, her child will be marked? Let every pregnant woman receive the tenderest care, yes, let her harmless fancies be indulged; but when she "longs" for anything pernicious, teach her that there are two sufficient reasons for denying herself: first, because the thing itself will hurt her or her offspring, or both; second, because her conquest of herself will strengthen the power of conquest in the child.

When one remembers how the babe within the womb depends, not only for every atom of its body, but for every tendency and disposition of its spirit, on the flow of nerve-force from its mother's brain and the steady current of blood from her heart; that her every thought, and especially her every desire, influences it; that even her dreams may fashion somewhat its limbs, or give

color and direction to its impulses, then one begins to realize how tremendous is that responsibility that God has laid on the mothers of the human race, and how great, also, is the responsibility of those who should adequately teach them their relation to their duties.

II. INCREASE OF CRIME.

The fact that eminent physicians have of late become earnest promoters and writers on a necessary reform in education, must be regarded as a proof of the growing anthropological conception of the human being. Among these writings we note the educational works of Dr. E. Seguin in America, Dr. Maudsley in England, Dr. Dalie in France, and of Prof. Wilhelm Preyer in Germany, and others. They recognize in the increasing crime, idiocy, insanity, suicide, intemperance, and poverty a slowly increasing deterioration of the race. The foregoing views on heredity and kindred subjects prove that *a priori* "man is not born aright." This cannot surprise us. With the prevailing uncertainty as to the desired normal standard of his body, his intellect, and his morals, man enters a world which receives him without convictions as to what he ought or ought *not* to be. Our claims on freedom for all, and equal rights, are neither strong enough nor sufficiently clear to constitute and carry out a matured idea of how man should be educated; that is, we neither know of a true art *how* to live, nor do we know how to prepare

others *for* living. The ancients educated every man according to his caste, using his individual powers as a part of the whole. He fell or rose in and with his profession. This condition passed away, with the exception of the rigid preparation given in our day for military duty in Germany. Apart from this, there is no stability in opinion, custom, or law, save the passing through a certain curriculum of intellectual training which ignores manifestly and fully the obligation of an all-sided preparation for life. "Let him fight his own way," "Let him be strong enough to avoid wrong," are all the watch-words to the young, inexperienced human being, wherewith to conquer the thousand daily temptations, to control passions of whose existence he was till then wholly unaware. These conditions are the common ones.

Young people, in most cases, are called upon to act responsibly for themselves, as free as the air they breathe, yet without sufficient protection. To succeed "materially" in life is the aim of practical training, as we call it. This is the goal to be reached. The higher and more conspicuous this is, the more valued is the success. How to reach this goal is the pointed motor of all actions. No time or inclination is left for broadness of aim, of fullness, of conception of *being* happy by *making* others happy; at least, not as a rule. All that lies to the right or left, above or below this aim, is of little consequence. *Nothing remains constant but SELF! self!* The home, not always demonstrating unity in will and

higher aspiration, develops not seldom little faith in authority of either father or mother. The child neither seeks nor gets the needed watchful assistance from the close *union of parenthood*; and if this is not reached, the home will never be his sole resting-place, though by higher laws it is the ordained place for the recuperation of his better self. The child's whole nervous system from his first remembrance is too much *stirred up* by the *discords*, the struggles even, of *the battle of life*. These he has not seldom found in the heart of his own home. He has hourly become aware, instinctively and intrinsically, of the conflict between the two sexes. Fried. Froebel, before he was six years old, suffered so deeply from the discordant life between his father (a clergyman) and his father's wife, that he asked his older brother "why God did n't make all men or all women, if they could not live without quarreling." Which question his brother answered by leading him to a hazel shrub, calling his attention to the difference between the male and female flower in the necessity for reproduction,—a fact which directed thus early the young child's mind to the problems and beauties of nature. On a recent occasion, Archdeacon Farrar, of Westminster Abbey, London, to whom we referred as regards the necessity of the culture of emotions, said of Persian education: "We boast of our educational ideal. Is it nearly as high in some essentials as that of some heathen nations long centuries before Christ? The ancient Persians were worshipers of fire

and of the sun; most of their children would have been probably unable to pass the most elementary examination, but assuredly the Persian ideal might be worthy of our study. At the age of fourteen, the age when we turn our children adrift from school and do nothing more for them, the Persians gave their young nobles the four best masters whom they could find, to teach their boys wisdom, justice, temperance, and courage, — wisdom, including worship; justice, including the duty of unswerving truthfulness through life; temperance, including mastery over sensual temptations; courage, including a free mind opposed to all things coupled with guilt.”

Let us consider frankly the course pursued toward the children of the nineteenth century. Science, the absolute power of the age, tells us by clearly proved facts that our children are not born as well as they should be; that they have to encounter more complicated moral-tempting and moral-destroying elements than life has ever before presented to obstruct the physical, mental, and moral condition of man.

The effect of these evils is manifest in the degeneracy of our youth. History describes education in past ages as inculcating, with the exception of some special periods, extreme simplicity, frugality, and the utmost moral restraint by means of family ties. It tells of guilds of apprentices bound to the family of the master in the exercise of patience, obedience, and respect; of the motherly influence of the master's wife, and sometimes of



the pure, long wooing of the master's lovely daughter; this simple, pure love shielding the young man for seven long years against temptation, while traveling from place to place, practicing his trade for a living, and studying man and the world; his heart light as his feet, assured that in every place, however small it might be, he would receive a fatherly and motherly welcome, and be cared for by the officially appointed (Herbergsvater) village innkeeper and his loving wife, till at the end of his journeying, after having finished his "masterpiece," his loving bride would meet him in a happy home, for which he had labored patiently, diligently, and honestly, true to his first vow. We know of the Greeks, and their careful watch over their youth. Their best men were kept with them night and day, affording them their highest influence and example. Their boys and youth were not allowed to go to the public markets, in order to protect them from low influences. We know of the Spartan fathers, who took their boys to their feasts, lest they might not neglect for a moment their self-control in partaking of food or in giving expression to their thoughts. We know of similar restrictions among the Hebrews; and it is an undeniable fact that, as stated in the report of the Bureau of Education at Washington, prisoners and criminals are very rare exceptions among them, not less unhappy marriages.

This brings forth the question, *Are our children to be*

blamed? That our children are not to be blamed, is beyond all question. It is also evident that the instinctive love of the mother, which makes her willing and ready to sacrifice her whole life to the welfare of her child, is not quite sufficient to meet the extended and complicated wants of the child, and in this incapacity her over-burdened husband participates. Thus individual family fitness is, unless with exceptions, inefficient. The simple duties and obligations of family living, that is, attention to the style and the required environments, are all a woman of average capacity can attend to. And the burning question of the day is, How can a mother devote herself dutifully to her family and also to her social position? The school in its effect is partly weakened by insufficient home influence, and partly by not recognizing itself as a fully responsible institution to perfect the man in the child AS A WHOLE, but to prepare him for life AS A PART; and as long as neither the conception of the individual man *as a whole*, nor the means to such end are fully known, and as long as motherly educational *principles* instead of traditional customs have not been connected with the first development of our babies, it can never be done.

Moral conception, leading to self-knowledge and justice, is not made the root-stock with which our children begin life in the cradle, to be carried as the most valued banner throughout their school life. What takes the place instead? Ambition and success are

written on the banners we put in the hands of our dear loving children, before they can *spell* these dangerous words, which read in plain language, "I kill you morally, or you kill *me!* and the end justifies the means." Where does the responsibility for this condition rest? The home claims it is the school, and the school blames the home. Neither is justified; yet it is clear that as long as there is no unity in action between these two educational bodies, the child, and with it the coming generation, must fall a victim. There never was a time when the search for true education was more strongly felt. And painful as it seems, our children, with all our boasting of intellectual teaching, logically fall a sacrifice to our ignorance and disagreements, in many cases leaving them wholly unprotected. Why is it, for instance, that though much is written and spoken, and many official efforts are made, to save our children from vile, corrupting literature, we still cannot prevent it? WE, a great, proud, powerful nation, free and independent to make our laws, find ourselves powerless to suppress the corrupting influences of vile literature to which our innocent youth, and consequently the coming generation, fall a victim!

When Agassiz was requested by Virchow, the distinguished German scientist, to inform himself as to the manner of recreation in our school play-grounds, he found, to his great amazement, groups of children read-

ing the vilest literature, such as an adult would reject with indignation.* Why is it that human actions which are considered as degrading man below the animals, and yet from an opposite view are considered as essential to human existence, are brought temptingly before the eyes and the mind of our youth of both sexes, often near to their homes, and even in the open thoroughfares, such pursuits filling large quarters in the centers of our cities? Lycurgus, of Sparta, resolved the whole business of legislation into the bringing up of youth. He looked upon the education of youth as the most glorious work of a law-giver; and by regulating marriage he began at the very source, taking conception and birth into consideration. He ordered the virgins to exercise themselves in running, wrestling, and throwing quoits and darts, that their bodies might be strong and vigorous, so that their children might be the same. It was to the young woman that he gave the power to praise the young man for his bravery and good character, thus exciting in the young man a useful emulation and love of glory in character and manners. Their ideas and their aims were naturally elevated by public games and co-education, yet this was four hundred years before Christ. How is it possible that a meeting held in Vice-President Wilson's room at the Capitol, to provide an industrial home in which any girl found wander-

* Some cities have their experienced smokers of five and six summers old.

ing without honest occupation should find protection, could come to a close without any success?—a meeting in which about a dozen policemen stated facts so horrifyingly painful that hardly an eye remained dry among those present. Who can be blamed for the consequences but the “unprotecting,” the “unguiding forces,” with our want of care and of proper laws, our want of knowledge or interest?

WE, the mothers of the race, need to be aroused to action against the evils which lie at the root of the sanctity of our married life. Few American mothers are unaware of the able educational bill brought before our Congress by the Hon. Henry Blair, during several successive terms. It is to be hoped that no American mother will rest, until our own Congress resolves, like that of Sparta, to protect our youth. Laws are needed in their favor in a hundred different ways, best felt and known by the keen, loving perception of a clear, practical mother's insight into life, for which she has to be prepared by especial studies, among them the history of her own sex. Man's intellect develops through his professional studies and individual experiences of life. He learns that the young tree, tossed and blown by the cold winds beyond its strength, would bear less fruit if unprotected against these and the destruction of insects and weather, so he studies and applies the necessary remedies, watchfully and permanently. Have all fathers whom God ordained to this highest of all offices, namely, to create

and to perfect children, studied conscientiously all that is needed for this office? Has he who delights in the birth of his child, read the alarming report that crime, insanity, and idiocy are increasing among children, and has he studied the "WHYS"? Has each father instructed his representative legislator to prevent these evils by making proper laws to *prevent* crime, indeed of correcting it? Has he studied these "whys" with the MOTHER of his own CHILD, in such works as they may be able to find on the earliest hygienic, mental, physical, and moral care of their child? Or is the over-anxious educator and lover of childhood giving a false alarm? Let us see what statistics tell us.

III. WHAT IS TOLD BY STATISTICS.

The earnestness which stamps these writings may serve to prove that the contents of this part have been most carefully selected. They were partly taken from the census, partly from papers and reports, published on purpose or read from the pulpit in grave consideration of the existing evils. The aim to arouse a conscious insight into these alarming facts, making clear that nothing will remedy them but *prevention* by personal education and efforts, is based on faith in mankind, and especially in womankind. Higher moral inspiration of woman, if called for, has never failed, as it is written on every page of history. May it not fail in this case to develop an

equal field of activity among men as well as among women !

One of the circulars of information from the Bureau of Education says : Out of 415 convicts sentenced to the Massachusetts State prisons in a single year, more than half were born in Massachusetts, and more than half were under twenty-five years of age, the average age of all convicts being for some time past twenty-four years ; in California, twenty years. Judge Cowing, of New York, calls attention to the alarming increase of crime, ninety per cent of the convicts being young men, of which, again, a large number belong to the higher educated classes. As to murders, the United States Census relates as follows : In 1850, one to 3,442 ; 1860, one to 1,647 ; 1870, one to 1,172 ; and 1880, one to 860. Since then there has been a yearly increase of 200.

Massachusetts enclosed, in 1881, 7,416 juveniles in the atmosphere of a prison. One hundred of them were under twelve years of age, and some so small that they had to be lifted up at the bar. The *New York World* gives the following extract from an official report of the State Board of Charities and Corrections sent to the Senate : —

“More than 52,800 persons, as criminals, paupers, are inmates of hospitals and reformatories in New York State ! Ninety per cent of all this crime, disease, insanity, expense to tax-payers, and disease to the State, is due to the use of liquors.

“The State should prohibit the sale and use of liquor, or prohibit the publication of its black facts.

“To purchase land and erect the buildings required for this sheltering of rum victims in New York, \$43,303,-478.85 have been expended.

“What a stretch of country this sum would have beautified, and how many private houses it would have built, how many children educated!

“The cost of these institutions for 1883 was nearly \$10,000,000. To this add the care, the sorrow, sickness, suffering, and the effects of all this and all these upon the unborn, who will indeed be justified in calling upon God to avenge a people whose united public sentiment tolerates and encourages the cause that produces such results.”

From a sermon delivered in February, 1887, at Boston, by a most distinguished clergyman, for years personally devoted to the solution of social problems, we are allowed to quote the following:—

“In no land in the world is crime so on the increase as in ours. With all our patriotic pride, we have to confess that we are going downward in the scale of public morals faster than any great modern nation. In 1850 there were in the prisons, 7,000; in 1860, 19,000; in 1870, 33,000; in 1880, 59,000: that is, in 1850, one prisoner to 3,000; in 1870, one to 1,000; 1880, one to 837; and 1885, one to 576. And our own Suffolk County puts the proportion one to 278.

"We are responsible! England and other nations are decreasing in crime. In England they have but one criminal to 18,000, because they care for *reformation*, — we only for *retribution*."

England, by a very efficient reform-school system, has reduced juvenile crime to an astonishing degree. In 1856, there were in England and Wales 99,755 adult commitments, and 13,891 juvenile commitments. In 1884, there were only 171,588 adult and only 4,879 juvenile criminals. If the rates of juvenile to adult commitments had remained the same as in 1856, the number would have been about 24,000.

It would fill a little book by itself to refer to the different ways and means by which almost every nation tried to strengthen the moral capacities of their youth,— the Riflemen in England, the Jugendwehr and the Knabenhorst in Germany, and the school gardens. The organized games in Switzerland tend to the same end. Russia, for instance, collects every night on its public places an immense heap of gravel, to be playfully leveled by the children in daytime. And the city of Paris, by supporting 34,000 orphans, or children without homes, has of late provided for 3,000 more, by placing them in good country homes or in responsible factories. The work, it is said, is done with great success.

Those familiar with woman's activities to solve and uplift social problems, know of the high rank English women take in science *side by side with the social econ-*

omists and in practical labor to better the condition of man ; a fact which it seems is not quite decided, as meanwhile Dr. E. Seguin speaks in highest praise of woman's scientific assistance in the treatment and care of the feeble-minded and idiots. Mr. William T. Litchworth, in his treatise called "Children of the State," says : "I think that in all *juvenile* reformatory work, women should be *permitted* to participate as equals."

In studying these questions in England, I was surprised to meet the devotion and self-abnegation of women of wealth, social rank, highest culture, and personal beauty, who live actually *with* and *for* the depraved classes. They are married and unmarried, with family and without family. On account of a wonderfully practical division of labor and time, and their great simplicity in dress on the streets, they have leisure, and give inspiring educational powers, where our average rich people merely pay their money. Thanks to the immense power of women of the Temperance Union and the kindergartens, and some other kindred institutions, there are similar efforts made in this country. Fortunately, the kindergarten system, as originated by Fr. Froebel, becomes more and more recognized in its educational, instead of mere charity value ; and, if carried on in its great *humane*, instead of its *township* spirit, by *efficient* teachers, it will become the chief starting-point of pedagogics through the fundamental insight in human nature, and its diversities therein laid open.

It is already affirmed by our kindergartners that children, as a rule, are "not born lawless"; a view W. Preyer takes also. Look at the thousand reports on the *most depraved* children, — as we call them, whether rightly or not, — how soon their association with kindness and righteousness develops in them flowers and fruits of the utmost delicacy! Why this? Simply because we have turned their attention from the dark side of life, and led them into the spheres of harmony and beauty. Mere roughness, coarseness, and boasting, nay, even bodily force, and disrespect of law, have nothing in common with a gentle but firm resistance, and a strong demand on their self-control, identical with love, friendship, and truth.

If there is any experience in my life that makes me happy and proud in mankind, it is the fact that thirty and forty of my own kindergarten children, ranging from four to ten years of age, who had only one spade, one rake, one hoe, a few trowels, and two or three watering-pots between them for their garden work, never quarreled, and never was there any complaint of their taking each other's flowers. The limited number of tools was, besides, purposely arranged. A nasturtium growing in the *center* of the open space from which a number of triangularly shaped divisions started, remained uninjured a whole summer. Here the general educational atmosphere held them in bounds; the children were fully aware how much I lived with them,

enjoying every effort to strengthen their own power of resistance. Our ordinary educational system uses restraint. As seen by the letter of Theane, the Greek mother, this theory is not new, but restraint is only of value when it becomes self-restraint.

But self-restraint is not merely to be exercised in *action*, but in the underlying motives and aims of actions. And here seemingly we fail greatly. Nothing has been left more to chance and without control than, for example, human amusements. They are not checked with adults or children till they become injurious to individuals and society. All that lies between has been ignored. The kindergarten or Froebel system makes play educational. These plays, far from being tedious or scholastic, bear an opposite character. Temperance will never accomplish its end until almost every rum-shop is turned into a place of higher amusement, of which those for bodily exercises will be most prominent.

These places, the most attractive we can imagine, must offer means to satisfy every peculiarity of taste in its highest degree. They must be presided over by the grace and beauty of the nations, as well as by the genius of play and happiness. They must be open to families as well as to single persons of either sex. Regarding our own body the temple of God, the perfection of body and soul must found its edifices in structures of beauty and eminence equal to the temple of God. What sense and what good has the lessening of labor, if we

remain indifferent to the use of the time gained for recreation?

Napoleon I. wrote: "The perfection of morals is the first duty of the state. It is, therefore, my first duty to prevent any injury to morals, or to build up institutions to make morals prosper." It has been petitioned to close our rum-shops. Let us have another petition to provide mankind — even the *poorest*, the *youngest*, and the *oldest* — with *elevating amusements*.

IV. INCREASE OF INSANITY, IDIOCY, AND JUVENILE SUICIDE.

Not less painful in themselves nor in their consequences stand the handmaids of crime, — Insanity, Idiocy, and Suicide.* In the paragraph, "Creation before Birth," their origin has already been touched upon, referring to their vital relation to parenthood on the basis of physiological and psychological laws. While the reference to these laws, which should be fully understood by every conscious, truth-seeking parent, does not lie directly in the line of this book, it seems impossible to withhold the proof of the increase of the last-named social calamities, as gained from official reports.

The following words the writer received from a dis-

* Dr. Isaac Kerlin. Observations made by Dr. Mills and foreigners show decided analogies between the brains of criminals and the brains of idiotic and imbecile persons not under criminal accusation.

tinguished physician: "The problem is, How shall we adjust the *man animal* to the *man moral, intellectual, and spiritual*? One thing I feel sure of from my own observation; that is, public sentiment needs education upon all these matters, so that parents will feel a responsibility that seems to sit very lightly upon the average father and mother at the present time."

[From the Journal of the American Medical Association.]

"CHILDREN OF THE SIEGE.

"Such is the name applied in France to those unfortunate children who were begotten during the siege of Paris in 1871. We call them unfortunate because conceived by mothers who, torn alternately by the conflicting emotions of hope and despair, and too nearly famished themselves to spare requisite nourishment for their offspring *in utero*, were nevertheless compelled to yield to the lust of half-drunken husbands. Begotten of such parents amid the 'horrors of the Commune,' these children of the siege came into the world puny and misshapen.

"M. Le Grand Saulle, one of France's most celebrated alienists, has stated that out of ninety-two such children examined by him, sixty-two were crippled in mind and body; out of this number thirty-five showed malformations, and twenty-nine were imbecile."

There is nothing surprising in these facts. They are so impressive, because exaggerated illustrations of what

we see about us daily ; children born of want and intemperance. Is it any wonder that they grow up to beggary and crime? M. Le Grand, in the same address delivered last April, brought out some interesting facts concerning the increase of insanity since the Franco-Prussian hostilities.

“He has examined 35,000 insane at the prefecture in the past fourteen years, and concludes that the intense excitement of these days is responsible in many cases for the mental alienation, having either produced it directly or precipitated its manifestations. Furthermore, he attributes the increased insanity of this latter half of the century to thirst for pleasure, pursuit of wealth, speculation in stocks, and intemperance, which last was the exciting cause in twenty-five per cent of his cases. Again, is there not a suggestive lesson here for us in America? Our people are not given up to a search after enjoyment, whatever may be the case with the people of France, nor is there here that consumption of absinthe which is accredited with the speedy production of serious brain disease ; but the excitement from stock exchanges and boards of trade, high pressure in other branches of business, and the great consumption of alcohol, are evils against which physicians, as conservators of public health, should raise a vigorous protest.”

At a meeting held lately at San Francisco, the official statement was made, that if the present ratio should continue, the State would have to build a new insane

asylum every three years. The following statement supplements this view:—

In fifty-seven counties of New York, outside of New York County and Kings County (Brooklyn), there are six State asylums for insane, built at a cost of \$5,967,732.94. To these six State asylums the authorities of fifty-seven counties send their insane, making a total list of 3,684 at the close of the year 1883.

The counties of New York and Kings provide for their insane in their own way. In the county of New York, at the close of 1871, there were 1,393 insane persons in the asylums on Blackwell's and Randall's islands. At the close of 1882, the number in New York County had increased to 3,525.

In Kings County, at the close of year 1871, there were 684. At the close of 1883 there were 1,236. In Kings County, in the period named, the number of insane persons had doubled, within 132. In New York County, during the same period, the number increased from 1,393 to 3,525, or 739 more than doubled.

Being favored with Isaac Kerlin's instructive report on idiots and feeble-minded children, we take the liberty to quote the following for educational consideration:—

"The total idiotic population of the United States, reported in the census of 1880, amounts to 76,895, which is only 5,102 less than the total insane, and nearly equals the total of the blind and deaf-mutes.

"During the last decade, the increase of population has

been thirty per cent; but the *apparent* increase in the defective or afflicted classes has been a little more than one hundred and fifty-five per cent."—*Compendium of the Tenth Census of the United States*, 1880, page 1659.

The ratio in returns of idiocy for 1880 shows an increase of two hundred and nine per cent over the returns of 1870.

He says: "The Juke family offers an educational view which does not seem to have been hitherto taken. Max and Ada Juke rarely fail of an introduction in these conferences, and always, it seems to me, under a cloud of prejudice that may bias judgment as to true conditions. Any close study of these unfortunate people reveals clearly the existence of a neurotic taint as the rational explanation of their crime, pauperism, and bestiality, and suggests all through their *needed protection against themselves*.

"The undoubtedly weak-minded Juke sisters married the two sons of Max, who is known as "a drunken, eccentric, and lazy ne'er-do-weel," who leaves a large illegitimate offspring. It is not strange that these unions entailed blindness, pauperism, prostitution, and crime upon children and grandchildren. The record of Ada Juke, through the marriage of her first legitimate child, who married her first cousin, is only less fearful than that of the illegitimate line. Both, in the sixth generation, after passing through the darkest and most loathsome

channels of impurity, are represented in living stocks of half-witted bastards, criminals, and paupers, who will continue to roll up the bill of expense for petty crime and misdemeanors and the untold expense of ruined character, wherever such plague-spots are permitted. Had it not been too early in the history of society, it is fairly presumptive that the twenty-one grandchildren of Max and Ada might have been recognized as unfit members, and, very consistently with the public welfare and their own best interests, have been detained for the better part of their lives in jails or sequestered in hospitals.

“Another view of this serious subject confesses that the need of this age and of ages to come is paternal government rather than an ideal impersonal government, — a government wisely dealing with the wants of individual man. It recognizes that a very large portion of humanity is still in its swaddling-clothes, or scarcely yet beginning to walk, requiring much help and much patience before arriving at that self-knowledge which guaranties self-care. It holds that, in our present development, government, when best for the common weal, should assume the relation, not of almoner, but of parent to its unfortunate children, whose only fault consists in not being born right.

“There is another sorry phalanx of misery, — the abandoned prostitutes of our cities, — recoiling on the community for its laxity of law and surveillance, and contaminating how many births of even lawful wedlock! Who are

these prostitutes? A class so feeble in will power, so ignorant and of such uncontrollable emotions, that it is no forced conclusion that very many are unsound and irresponsible, the sinned against rather than the sinners.

"And yet another host is darkening the whole land, — the alcoholic inebriates, — more numerous than all the insane, idiotic, blind, and deaf-mutes together, re-enforcing the ranks of pauperism by other legions, and sowing a birthright of misery unto children of the third and fourth generations. Expert physicians are telling us — and daily their testimony is better received — that alcoholism is a neurosis, amenable to medical measures under the *régime* of complete isolation from provoking causes. This is wiser than to call it a crime, without depriving the criminal of his misused liberty.

"To the practical, it would seem that the functions of government are not discharged toward its peace-loving, frugal, and law-abiding citizens so long as these disorderly, contaminating, and misery-breeding elements have share and share alike of that "personal liberty under the Constitution" which should attach only to personal reliability. Under the ethics of law and religion, they are almost unreachd. The so-called education of the schools is admitted in the oldest communities to furnish a great many of its pupils only a better armament for mischief. So that, education, law, and religion failing, shall we not reform our conclusions as to the nature of the ills from which we suffer? May not the study of the humble idiot

and imbecile in our institutions aid us in discovering some analogies heretofore undreamed of, and perhaps a healing to the so-called corrupt, and the only safety to the healthy be found in an arbitrary but legal isolation of the unfit?

“There is no field in political economy which can be worked to better advantage for the diminution of crime, pauperism, and insanity than that of idiocy. The early recognition of some of its special, upper, and more dangerous forms should be followed by their withdrawal from their unwholesome environments and their permanent sequestration before they are pronounced criminals, and have, by the tuition of the slums, acquired a precocity that deceives even experts. Only a small percentage should ever be returned to the community, and then only under conditions that would preclude the probability of their assuming social relations under marriage, or becoming sowers of moral and physical disease under the garb of professional tramps and degraded prostitutes.

“How many of your criminals, inebriates, and prostitutes are congenital imbeciles? How many of your insane are really feeble-minded or imbecile persons, wayward and neglected in their early training, and at last conveniently housed in hospitals, after having wrought mischief, entered social relations, reproduced their kind, defied law, antagonized experts and lawyers, puzzled philanthropists, and in every possible manner retaliated

on their progenitors for their origin and on the community for their misapprehension? How many of your incorrigible boys, lodged in the houses of refuge to be half educated in letters and wholly unreached in morals, are sent out into the community the idiots they were at the beginning, only more powerfully armed for mischief? And pauperism breeding other paupers, what is it but imbecility let free to do its mischief?

“We should not deplore, and we may certainly anticipate, a steady statistical increase of insanity and idiocy for the next four or five decades; even should it be at the rate of hundreds per centum increase for each census, it will indicate not so much absolute increase of the diseases named, as a broadening of definitions and better analysis of conditions, — common-sense and a higher Christianity dealing with defective and irresponsible people.”

What can be done? Man, with his burning heart, thinks of the almost eighty thousand children whose only fault exists in not being born well. To what can he appeal but to education? Not that education which presents mere learning, mere knowing. It is *action*, not mercenary but *moral action*, and its fountain spring is Conscious Motherhood.

Unable to find some reliable statistics on juvenile suicide, it may be said that, according to European statement, their number is steadily increasing.

V. UNITY IN PARENTHOOD THE NUCLEUS OF MORAL AND PHYSICAL PERFECTION OF MAN.

"Know yourself" stood out in solemn letters over the entrance of the oracle at Delphi, two thousand years ago, to be re-read in flaming words by the progressive spirit of the nineteenth century. Self-knowledge is the appeal heading each page in the science of man. Self-knowledge is the aim of the endless labor of statistics to warn against growing evils and their causes. Self-knowledge finally is hailed by woman, the mother, throwing new lights on her powers and her duties. Not for mere "woman's rights," but as the indisputable command of science to step forward with independent thoughts and actions for the well-being of the human race, of which she is the bearer. This last great office includes the fulfillment *in* and her connection *with* a partnership, without which the highest gifts of her nature would have been left without completion. And it is in this *natural completion* that we recognize a special qualification called motherhood.

The process which leads from the poetically veiled nature of the virgin to the free unfolding of motherhood has aroused in man through all ages the spiritual and ideal conception of womanhood. We find them still connected in a thousand individual forms with the daily dealings of savage tribes, while our modern habits lose from day to day the character of a *natural*, not fashion-

able, conception and restriction among the two sexes; a fact which can not be cast aside, considering its grave consequences toward a higher conscious unity in parenthood. History tells that the Visigoth who touched the fingers of the *free* woman had to pay 600 deniers; her arms, 1,200 deniers; her breast, 1,800 deniers; and that the man who destroyed her virginity was made her slave for life, with all his property.

The high estimation of the free woman, the trust of one man in another man, of which our age shows decidedly the opposite, was beautifully illustrated by a king of the Normans, who sent his only daughter away to be educated by his unmarried friend, a farmer. These facts have been preserved in the records of ancient history, and prove the purity and chastity of the Teutons and the Scandinavian races, of which Tacitus can not speak highly enough; facts which must fill the heart of every woman with pride and hope, because they reveal the higher qualities in man, whose innate respect for motherhood is even exemplified to him by the actions of the male animal.

Or is it true, what Maudsley says, that man actually is so far from nature that he stands far below the animal?—a saying the better woman *can* and *will* hardly believe. But she cannot deny, from her personal daily observation of life, which is illustrated in our belle literature, — the silliness of woman, the pettiness and narrowness of her aims, the want of faith in her

higher capacities even by her own sex, — that if man comes not up to the desirable standard, woman is not less what she *might* and it is hoped will be. But as Josephine Butler claims, regarding our young men in society, “as long as selection is renounced, and even barefaced vice is no disqualification to their being well received in the wealthy drawing-rooms, the young men feel and improve all the privileges of their position. They even become careless of hiding what is no longer reprobated, and they begin to speak of and to be seen talking to the notorious harlots of the day. When the best sanction of social morality — the reprobation of vice by woman — is cast aside in the highest circles presenting the moral culture of our sex, who can tell how widely the encouragement may act?” Savages claim that a queen governs well under male assistance, while men become enfeebled by women. Woman had a female senate in the empire of Rome. Eminent men of all ages had faith in woman. Goethe, in his immortal sentence, “the ever-womanly draws us up,” refers to the law of nature reborn in every woman, yet by countless years of unnatural conditions leading woman from the height of self-conscious womanhood to its deepest degradation, as read in the following laws, still found in existence in our sister republic, France, and in England: —

1. *Toute seduction est impunie* (seduction is not punishable).

2. *Toute promise de mariage est nulle* (neither is the promise of marriage).

3. *Les enfants naturel reste à la charge des mères* (illegitimate children are to be supported exclusively by the mother).

4. *Le droit de correction—le droit absolu sur les actes—de la femme—même sur le corps est au mari* (right of punishment—absolute control over all actions of woman—even that of the body—belong to man).

5. *Le devoir conjugal explique ce droit* (conjugal submission explains this "right").

In the last *Woman's Journal* we read as follows:—

A Nova Scotia mother, Mrs. McPherson, placed her three-year-old daughter temporarily in the Halifax Infants' Home for safe keeping. Without her knowledge, the managers of the home gave the child to a family living at a distance, to be adopted. When the mother discovered what had been done, she applied for possession of her child. Judge Smith, of the Nova Scotia Supreme Court, has just decided the case against her, on the ground that the mother has no *locus standi*; that she has no right to the custody of her child so long as her husband may be alive. Mrs. McPherson's husband deserted her several years ago.

We do not aim to refer to the need of *special laws* concerning women and their necessary improvements, but we know that America, with her glorious Declaration of Independence, and her demand of equal rights to the pursuit of happiness, in case she is to become the God-ordained and first nation, to solve *on free soil* the prob-

lem of social equality, and not to turn her great future into a most fearful chaos of human passions and destructive forces, has most of all *to revise those laws* which touch the central germ of her *higher or lower* existence, namely, *the home!* Nothing but the home and the purifying influence in society can change, frankly spoken, our morally criminal condition. What result can a state expect, though it may be the grandest on the globe, which does not by all possible means protect the purity of the home and the rights of the mothers, the bearers of her children? *Why shall she have to beg through a whole generation for her equal rights?* Let the mother be set free, *permitted to think and to act by reason;* let her be *made responsible* in her duty as mother for the shaping and molding of the coming race, *assisting and guiding* where she has no voice at present, and her innate powers of motherhood will lead her back to former dignity and moral leadership.

Complaining of man, we may frankly confess the perhaps strange doctrine, that it is only through woman, through enlightened motherhood, that man will be raised and partly freed from the evils under which he is born. The quotation from Josephine Butler tells a great deal in a few words. This condition, and the better man agrees with it, has to be changed before we can expect "*that unity in parenthood*" absolutely necessary to perfect the human race, morally and physically. It is the mother who must become enabled to judge the *value*, and to

select, by means of this value, in the highest loving inspiration, the *man* suitable to be the ideal for her child, may he be a prince, or the simple laborer gaining his bread from day to day. Do not say this condition is a dream. Ask any highly organized man, who takes the wife of his heart, if he does not identify her value and her lovingness with the capacities she will bring to his home as the mother of his coming children. He knows very well that no wealth, no rank, and no earthly structures, however beautiful they may be, can give him the home, namely, *the spirit* of the home. We complain of divorces and kindred topics. Why is it, then, that a man can be divorced one month, and be remarried the next to a *fair woman*? Why is it that a man can be divorced even *twice*, and find *open arms* which he may leave soon for his *third* choice? The practical conclusion formed by the writer on this subject is presented in the following petition, with the desire to accomplish practical results:—

Recognizing in your honorable body the power of regulating and directing the general educational advancement of our state, we, the mothers and daughters of America, trust, in coming to you, that you may use this power justly in helping us to reach and to perfect those qualifications which form the nucleus of woman's sphere, namely, the child's earliest moral, mental, and physical unfolding. To this end we, the undersigned, take the liberty to present the following to your favorable consideration:—

Whereas, it is the characteristic tendency of our age to free the female sex—the other half of humanity—from the

instinctive passiveness and lethargy toward the outer world, thus leading it, by its vocation as the bearer and first educator of the human race, to equal responsibility with man; and

Whereas, we have learned that to be a teacher a scientific preparation is needed, but to be a mother and a teacher *in one* is left to chance, we find the vocation of *some* women more considered than the vocation of *ALL* women; and

Whereas, this is an injury to the race at large, and to the welfare of the state in particular, which depends on the moral, intellectual, and physical condition of the individuals and their first educators, it becomes evident that if possible such provision should be made by the state or by society as is necessary to prepare all women, and likewise men, for their natural position as mothers and fathers; and

Whereas, the connected sciences of our day, promoting the highest culture of man, claim that the spiritual and physical development should be blended in one, and that such development beginning with the first day in life, and before life, — the basis of *all later* doing and knowing, — belongs to the mother and to home influence; and

Whereas, this motherly development, based on the understanding of the laws of nature in general, and of the nature of the child in particular, resting largely on the studies of physiology, psychology, and pedagogy, is destined for the first time in history to unite the highest scientific efforts of both sexes to one end:

Therefore, the question arises, How can the state or society furnish such preparation as will enable our young girls and boys to gain, besides a general education, a special education for the understanding of the sacred duties of motherhood and fatherhood?

This should be done —

By connecting with our higher school grades and normal

schools a special connected curriculum of studies, as follows: Anthropology, psychology, and the science of education; history of educational theories, of law and ethics, and hygiene; Froebel's system and its connection with the earliest development of the human race, physically, morally, and intellectually; the attendance of suitable kindergartens, cooking schools, and visits to children's hospitals.

By establishing in our universities special educational chairs or courses, designed to prepare special teachers, such as are needed to furnish the above-named instruction in our schools and normal institutes.

By encouraging able lecturers to diffuse new light on this most important problem of man.

Not until the science of life and man is equally understood by men as well as by women;

Not until this understanding brings equal weight of responsibility to men as well as to women;

Not until the preparation for fatherhood and motherhood forms a lasting curriculum in our higher school instruction and in our universities, can we expect a sound and lasting progress of mankind.

Thus elevated by knowledge and the sense of duty, higher moral responsibility will create laws unconceived in our time of blind ignorance on the most vital topics concerning man in his whole physical, mental, and moral being. The laws of to-day directed to the *keeping* of the existence of man will be evolved into the *prevention* of the existence of man. While "crime" stands out in bold letters concerning the first, "crime" will not be less the name for bringing life into existence, where

certain conditions—upon which society will watch with severity and judgment—are not fulfilled. “The increase of divorces during the past thirty years is an ominous symptom,” says Dr. Dorchester. They have doubled in our country, and this very likely presents the average *status quo* in civilization. What can and will be its sole remedy? Nothing but the union in an enlightened ideal parenthood. The “onward creative” powers of the world are “bisexual.” Only one of these powers has been given, heretofore, the full liberty of action,—the power of *the male sex* to govern the female and her child. The *deciding* instead of the *considering*, the *defensive* instead of the *uniting* forces, the *submitting* instead of equal reasoning forces, have prevented an equilibrium of justice, freedom, and higher love. *The bias of parenthood was, in law, an act of submission.* In the name of childhood, let it be evolved into a free but indissoluble *union of love, friendship, and estimation.*

CHAPTER III.

THE CHILD'S RIGHT TO AN EARLY EDUCATIONAL UNFOLDING, BEGINNING AT THE CRADLE, BASED ON A SCIENTIFIC CONCEPTION OF THE CHILD'S NATURE.

- I. Wilhelm Preyer and Friedrich Froebel. — II. Inviolable Childhood. —
III. Children's Diaries.

I WILHELM PREYER AND FRIEDRICH FROEBEL.

W. PREYER, Professor of Physiology and Psychology at Jena, furnishes a scientific record on the physical, mental, and moral development of his son, from his first hour till he was three years old. Preyer's merit consists in the fact that while he intended to write a scientific book for the *learned* world, he wrote a book for mothers. The previous idea, that a mother's devotion and instincts were sufficient to guide her in forming and molding the human race, vanishes before the statistics of the causes and effects of crime, idiocy, insanity, poverty, and suicide. The woman of the nineteenth century, equally repressed and oppressed by her ignorance and vagueness of her knowledge, is ready to welcome from the depths of her inspired nature Preyer's most valuable work. Woman of this age has to learn that "to save man" is "to study man." Preyer's work leads the way.

Once knowing this book, no woman, no mother, can fail to follow its guidance, which leads into the sanctum of the child's body and soul, for which the mother is made responsible. Here childhood and motherhood, without losing their former love, glory, or poetry, have united in a solemn demand for justice and law, based on science. *No higher appeal was ever made to woman. The religion of faith has called forth a religion of action, — a religion of action which, by directing and elevating woman's creative forces, turns them into a moral revelation to mankind.* May God help and bless her! To this end the writer offers to women and mothers a translation of Preyer's work. His work combines a lengthy observation of experience of infants in public institutions, and an extensive comparison with other writers on the subject. It consists of extended and detailed psycho-physiological observations, connected with the study of the gradual educational development of his child. In this work is combined the educational influences of two authorities, each strengthening and completing the other, namely, W. Preyer and Friedrich Froebel.

FRIEDRICH FROEBEL was born in April, 1782. It is a remarkable coincidence that Prof. Preyer's work, "The Soul of the Child," was published in the same year in which Froebel's centennial anniversary was celebrated, — remarkable on account of the similarity of their conception of the nature, the physiological and psychological

educational needs and restrictions of the child. Froebel had not studied medicine, neither was he prepared with lens in hand to look into the mysterious, nervous texture of the human body. But his intuitive conception of the wants of harmonious development directed his keen observation of the outer life to the inward nature of things, and reciprocally their outward relations to cause and effect. He arrested his thoughts before the great stillness of nature. Her grandeur, her beauty and government by law, became his teachers. Identifying the lack of harmony with man's ignorance of the laws of nature, he set himself to study these laws. Wishing to lead man back to nature from which he sprung, he became a philosophical and practical student of man and nature. Imbued with the educational principles of the ancients, strengthened by the views of Locke, Comenius, Rattich, Basedow, and Jean Jacque Rousseau, he at last found the idealization of his views in Pestalozzi's method. He lived for more than a year under the roof of this great teacher, and came fully to agree with him that the mother should be recognized as the *first* and *natural* educator of the child; a conviction which Pestalozzi illustrated so touchingly in his story of "Leonard and Gertrude," and by his lecture when eighty-two years old, "on the simplest way to educate the child from the cradle to its sixth year,"—a lecture which, at the time, filled all eyes with tears. Froebel, recognizing his natural vocation as an edu-

cator, prepared himself earnestly for this responsible office.

Around the bright bivouac fires in the famous camps of the Luetzower Corps, which was composed of the best young men of the country, he found a warm encouragement. He gained strength from an ideal and lasting friendship, combining effort and strength with faith, joy, and hope, which grew and developed from the blind enthusiasm of youth into the earnest, practical labor and endurance of manhood; a friendship that knew but one head, one heart, and one noble, united aim, which was "to serve mankind." Such friendships, often formed among the Teutonic race, seem like echoes from the dark, green, everlasting, sacred forests of old, whose legends tell of a devotion and sacrifice for which our busy life has hardly time or taste. In 1816, Froebel, assisted by his two friends, opened in a simple farm-house his educational institute at Griesheim, in Thuringia; Middendorf and Langsthal, his two friends, serving and maintaining this establishment at unparalleled sacrifice. Here also lived Froebel's wife, a woman of high rank, brought up in luxury. When assistants were engaged, there was never a fixed arrangement as to salary, the income being used but for their barest necessities. So hard were the times that chalk-marks were often made on the bread, to indicate the amount that was to be eaten each day of the large loaves, baked at the institute. One coat served the four friends in

turn as a best garment. Mr. H. Barop, who entered as an assistant in 1802, and who still holds the principalship of the mother institute now at Keilhau, Thuringia, a most distinguished university college for boys, did not see his own child after it was four years old, as he was called away to establish similar educational institutes in Switzerland and elsewhere. Land and several large buildings were given Froebel and his disciples for new institutions. In the heart of a peaceful and picturesque landscape, surrounded by the beauty and undimmed freshness of nature, far from the restless noise, the young child and its physical and mental needs became the fructifier and inspirer of thought to this unselfish, high-minded body of *men* and *women*. Comparison made here between the children born in their own family circle and those entering the collegiate course, showed very clearly the lack of early development of mind and body during the first years of the children from the outside world. Froebel himself had lost his mother when a baby. His instinctive desire for harmony, beauty, and mother's love led him quite early to the observation of the divine beauty in nature and plant life. With reverence and acceptance he learned to recognize the divine intention in creating similarities. In a most pious submission to the supreme will, he sought for light in studying the laws of harmony, that he might remedy the discords of life which filled his mind and thoughts. As a boy, from seven to eight

years old, his tastes were peculiarly fostered by his botanical studies in the forests of Thuringia, under the care of a forester.

Thus so favorably predisposed, aided, and trained, Froebel learned to recognize in each child a new educational problem, to be solved according to its nature. Studies directed to the action of mothers were valued by him as crystallized practical experiences. He proved them to involve conformity to his views of the child's natural wants; thus leading him, when at the height of his influence, to devote the rest of his life to the search of a method for a harmonious human unfolding, beginning at the cradle. It is a great error to suppose that Froebel's system is only applicable to very early life. Froebel bases the fundamental principles of education on the universal laws of nature, demonstrated in their manifoldness, and recognized in mankind by individual forces. He therefore demands a methodical unification in education, in order to reach the divine through a unification of action. Froebel says: "All that exists manifests an eternal law. This law forms the unity of all objects in nature of which man is a part; and however the stages may differ, they come under one universal law of development, through a gradual process of perfection or deterioration; leading either from the chaotic unformed to the formed, or else going back to chaos. These universal laws manifested in plant and animal life we recognize equally in the coiled-up forces of the acorn

as in the developed forces of the gigantic oak-tree. The slightest interruption in the growth, the slightest disturbance of the healthy condition of the mother germ or the baby plant, will cripple the whole plant, root by root, stem by stem, flower by flower, fruit by fruit."

Recognizing that these organic laws of nature are applicable to men, as disclosed by each step of a true science of man, Froebel perceived the methodical development of the man in the child. The perception of this unity of forces directed to the perfecting of man's nature led Froebel to anticipate a gradual development of man, through emotional and intellectual activities in which the child should be recognized as part of a whole, and as a whole in its parts. In this higher unity, Froebel foresaw, not only the present psychological conception of man, but also the present moral standard. In spite of the existing diversities of our life, the ideal watchword of our time is "unity": unity in body and mind; unity and equality in law, in responsibility, in labor, in hope and fear; unity in perfection and elevation; unity in nature and man, is the moral, pedagogical, and religious solution of our time. Froebel's educational theories and practice, completed by Preyer's practical, psychological, and pedagogical observations, *meet* the present anthropological and moral needs. These two great authorities, approaching the subject from opposite points, seem to open a new pedagogical era in the bringing home to men's hearts a conviction of these high educational truths,

and it is the writer's conviction of the necessity of a universal insight into the depths of these truths that has urged her to attempt to merge the utterances of these two authorities with her own life experience in education in the following chapters.

II. INVIOLATE CHILDHOOD.

Inviolata childhood is heaven on earth. Without riches, without honor, without merit, without science or art, childhood finds the world full of priceless treasures and of ineffable wonders.

Given a few broken pieces of glass, a flower, a fruit, a colored string, a doll, and out of them the baby imagination constructs an immeasurable happiness.

A few anointed ones of the human race have kept this power of creation, — of symbolizing alike the mysteries and the realities of life; we call them our ordained poets and artists, and receive with reverence the gifts they bring us from their childhood.

The child knows naught of earthly gains and losses; it knows no dread of death; to it, life and peace are without end. The suppleness of its body coincides with the suppleness of its soul. For him, the stone lives; and, like the kiss of his mother on his ruby lips, like the flowers and ribbons with which he adorns his obedient playmate, the dog, belongs equally in the great brotherhood of things of which he is himself a part. Compare



his faith, his hope, his love, his simplicity and happiness, yes, his spontaneous altruism, with our own aggressive selfishness, our artificiality, our efforts to seem what we are not, our complex wants, and our hypercriticism, and the question arises, Are we not aware of the distorting effect upon a normal childish development of the effort to stamp children early with adult forms and patterns?

Was the conception of childhood and the reverence for childhood not lessened in the same degree as that in which the present generation has been hurried away from it?

"Les extremes se touchent." Fifty and sixty years ago, educational principles dictated, "Keep the child as long as possible a child, in spite of early instruction." They dictate at present, "Force the child, however prematurely, to take on the shape of the adult, *without* early instruction."

In the first method there was individualizing; in the second, formalizing of the child.

Our still limited insight into the hereditary psychophysiological influences of which any given man is a product, and furthermore, our limited knowledge of his dependence on or independence of the environments of his life apart from education, leave unsolved the problem, what elements were brought in contact to crystallize into the individuality of a Plato, a Shakespeare, or a Maria Theresa?

What laws, fixed, yet unknown, and perhaps forever unknowable by human intelligence, directed these atoms and forces into the formation of beings of a higher organization and a finer, freer individuality?

If we may not know the laws, we know at least that all law is orderly and logical, and we see that in proportion as we keep our meddlesome hands off that sacred possession of childhood, its own individuality, we leave untrammelled the continued operation of those laws which brought it into being just as it is.

As no two plants are the same, as no two leaves are the same, so no two human beings are the same. Sameness is neither an aim nor a possibility in creation.

The uninvaded seclusion in which Mother Nature keeps the babyhood of her offspring, the reverent care recalled in the thousand known and unknown ways in which she protects the first germinal activity against any influence adverse to the preservation of its special characteristics, might well be considered and imitated by the human family, and reduced to moral obligation. Were it only possible to make this reverence for childhood real; were it but possible to have people realize the injury they inflict on the infinitely delicate mental and moral tissues of the little child!

Almost every one of us might admit, if we were candid, that we carry to-day a scar from some cruel, unthinking stab in our moral consciousness. We wrap our little ones' bodies in furs against the winter's cold, we temper for

them the summer's heat, and meanwhile we assault their souls with the spectacle of our anger or our cynicism, and we do not hide from their innocence our self-excuses for lack of duty, our moral debility and cowardice.

Again, with how much of awe do we relate ourselves to the still sheathed buds of their mental powers. Do we treat with any adequate intelligence and delicacy those folded-up responsibilities? Do we stand guard over the awakening of those inborn capacities, and forbid all intrusion on the child's intellectual individuality? If not, then we are responsible, culpably responsible, for the thwarting of their destinies. Not that we are to expect that under favorable circumstances every child should attain the distinction which, according to statistical estimates, falls to not more than one in four thousand, but we are tacitly pledged to assist every child to reach the highest that is possible to him, that is, the complete development of his individual organization; for only by this means will he be equipped to take possession of his full share of personal happiness, and to wield among his fellows his full and normal influence.

We should cultivate a child as we cultivate a rose, by supplying the very best conditions of growth, and then respecting its individuality in the use of these conditions. It is by this compliance with the laws governing each separate living organization that we see developed those personal peculiarities that enchant us,—the modulation of voice that distinguishes a woman among a thousand

others, that tranquillizing touch of the hand in one whose one charm it may be, the power of command which some men exercise unrebuked, the nameless fascination which, by whatever expression, is still the result of that combination of inner organization and outer environment which we call mere individuality.

Of course, then, as the means to the end we seek, we are brought back to inquire, How are we to supply these needful best conditions?

No doubt, nothing is more difficult to understand and nothing more difficult to meet than just those grave needs of childhood, — to give it the right materials and opportunities for the awakening and exercise of its senses, to lead it to the right use and control of its own will, and the right perception of its relations to others, and at the same time to avoid molding it arbitrarily; to place before it the wonders and riches of life, and yet to leave it free to see them with its own eyes, and not with ours; to refrain from spoiling its simple self-created joys by lavishing upon it costly and complex toys, and yet to respond to its yearning for sympathy in its play.

We make our children clever, but we do it at the expense of their childlikeness and their originality. We teach them to be critical, even censorious, before we have permitted them to exhaust the full pleasure of admiration. We hold up before them the faults which we bid them avoid, rather than the virtues and harmonies they are to imitate. In a word, which we cannot too earnestly

repeat, we do not sufficiently and always realize the value of leading children to an affirmative conception of life, before we fill them with negations. From the beginning, we should, for example, instead of putting life and death in sharp antithesis, direct them to the idea of life rather than lives; of one life which bursts into visibility everywhere, — in the star, in the spider, in the violet, by the same inherent positiveness, — and of death as not so much the extinction of life as its change of form. Of this they have abundant illustration in the life of plants, the flower transferring its part of the universal life to the seed, the seed life transmuted again into sprout and root, and so on through the endless chain of being, which a little child is quicker to apprehend (according to my observation) than is the over-taught adolescent; for every child is quick to feel and find resemblances and unities. Their nimble, warm imaginations perceive or construct kinships in nature, where we with our cold classifications see naught but separations. One of the little girls of my school, just now at my desk, looking at the picture of two pears in one of the drawing-books, said to her mother, "They are two brothers," thus showing again what is exemplified constantly in the kindergarten, — the carrying over of the family relations into every embodiment of life. In this case, however, it may be well to note in passing that the mother of little Marion is herself a thorough Kindergarterin, who has nourished at home that tendency to unification which the child gained at the

kindergarten; and this mother assures me that Marion holds the same attitude toward everything, and receives in the same spirit all the facts and events of existence. This self-assumed attitude leaves the child free to be happy in his own activities, in his own discoveries, and is, indeed, the secret of the natural contentment of childhood which only disappears when we overlay it by our own obtrusive discoveries.

That a happy child is a good child is true in a scientific or educational as well as in the ordinary sense; and to preserve this happy spontaneity, which is itself the preserver of innocence, we need as far as possible to leave a child to his own unconstrained self-expression in play.

Froebel — undisputed authority as to the normal faculties and wants of childhood — says the child has eight instinctive activities, of which the following meet our present purpose: viz., the instinct for play, for producing, for shaping, for knowledge, for society, and for cultivating the ground.

In all these the child is independently active, and only needs to be provided with the material and the opportunity. But this provision is more inclusive than we think, until we are warned of it by the child's restlessness under privation of material and opportunity, and nothing so completely answers and satisfies these higher impulses as a plenary communion with Nature. She is the foster-mother of the soul. She

calls the child, without frightening him; she teaches him, without repelling him; she speaks a language he understands better than words; and it is in proportion as he does not forget this grand, simple dialect, that he remains long a child, that is, a poet.

Attend but reverently enough, and you will catch a glimpse in the treasure-house of a young child's imagination. See him, when hardly able to hold a pencil, making groups of smallest dots, to you barely visible, and utterly meaningless; to him, representing the most elaborate pictures of life. Forests are there, towns, streams, horses, flowers, birds; in short, all living objects which have inspired his love or excited his fancy. And in what ardent words, with what evidently vivid visualization, he will describe to you these scenes! Oh, beware of throwing an obliterating breath or a distorting ray upon such soul-pictures! From germinal specks like these are to grow man's memories, potent for good or ill. In these pregnant hours are quickened an alien indifference to, or a supreme and life-long joy in, a poetical relation to nature. Which of us will deny the absolute influence over his life of certain recollections carried up from childhood like the holy contents of an ark; certain odors, certain melodies, some unexpected or mysterious light? These, however often reproduced, bring with them a whole epoch of our childish years,—years in which we fit into the windows of the soul those wondrous bits of stained

glass which shall form forevermore the medium through which we regard life, and which shall make it either lurid, grotesque, or beautiful.

The poets, as I have said, are those who have not outlived their childhood. (Some romantic doctor has declared that the mysterious *fontanelles* of infancy remain always open in the poet.) And among them all there has not lived one who more completely retains the very tone and mood of his first impressions than the prose poet, Bogumil Goltz. In his prose poem, "The Book of Childhood," he almost brings back to our lips the taste of mother's milk. Rousseau and Jean Paul and numerous others have embalmed their own infancy within book-covers, but Goltz brings *our* childhood to us, and we live it over again with an ideal light upon it, — "the light that never was on sea or land."

There is room for more such literature, for all that puts or keeps the adult in sympathy with the child. We shall be the better parents and teachers for remembering with Bogumil Goltz the raptures and reserves of infancy.

He says: "In childhood one feels as never again the poetry of a corner, of the little space shut off from the larger space that encloses it. Such, too, is the poetry and mystery of a pocket, especially of a pocket that buttons. The pocket is a symbol: it means the most intimate outside space; the place apart, peculiar, sacred, and inviolable, where one's special possessions are preserved; where a free creature bestows

his property in complete separation from the general possession."

The author from whom I am quoting should be read by all who wish to get an insight into the real poetry of child nature. This poetic quality is referred to by citing the child's sense of increased power, his sense of knight-hood, when he dons for the first time a new pair of boots with brazen heels. This early sentiment of poetry, as it may be called, is no unreal thing; it continues to exist, though unrecognized, throughout many years of severe and exhausting labor, as far as possible removed from anything which seems to be poetic. The golden age of childhood is not altogether lost, though years may separate us from it; it still lingers within the breast of every man or woman not wholly abandoned, and lost to vice and crime.

It is because the writer feels—has verified in her own person as a child, and in numberless observations of other children as a teacher—all this sensitiveness and power of childhood, that she has endeavored in some drawing-books to lead the child gently along a road in which there are no gaps, and where, far from closing the gates on innocence and poetry and mystery, he is but given precious, alluring glimpses of the inexhaustible mystery and poetry of nature and life. The introductions, too, in each book, are intended in part to illustrate the ideal relation between teacher and child, to give joy to the one, and perhaps help to the other.

From lesson to lesson and from book to book there is the gradual evolution of form, color, structure, function, ethical and æsthetic signifying cause, crystallizing finally into the last results of science as far as science answers the questions in that department of study, and missing its mark if it is not found to have promoted the child's moral growth as well as his dexterity, physical and mental awakening. These are lost now for our children because too much is given them; the poetical atmosphere here is ruined, is replaced by reason, and grammar, and bald, lifeless knowledge. The literalness, the irreverence, the lack of imagination, the criticism and irony of grown-up people, are put upon the children. This is the more lamentable, because "there is but *one* learning, but *one* hearing and seeing, but *one* reproduction and creation, *one* being, doing, and having, *one* growth, experience, and life, and that is the life of childhood. All that one labors, perceives and learns, feels and knows, is a half-life, a feeble arrogation of possessions."

To the child each object, each season of the year and time of the day, each landscape and instrument means as much more than to the ordinary adult as the child's inexperience and innocence exceed theirs. As said before, he symbolizes all things; hence he is a poet. Goltz says further: "The highest culture, beauty, grace, poetry, and art, all work essentially by a symbolical power." "Without symbolism the creation re-

mains dead material, a corpse without a spirit, a cipher writing of God, without meaning or key."

"Æsthetic culture finds in this symbolism of the reciprocal relations of art and nature, of the soul of nature, of the soul of the external world, and the ways in which these groups of factors attract and repel each other, interpret, complete, deny, or affirm each other, in a word, on the whole interplay of subject and object, an inexhaustible study, a new world of processes and principles."

"All processes, all forms, all colors and tones in this world of ours, are but the reflections of an ideal world, — of a divine order of things. All objects and conditions, deeds and situations, signify a thought of God, and conceal or reveal an eternal secret."

I will end these extracts from Bogumil Goltz's book in the words in which he begins the book: "There sounds through all our lives a tone as solemn and holy as the tone of harp or organ; it is the tone of our *childhood*, which reverberates in every human soul as long as it is not utterly demoralized; and even the villain, the robber, the murderer, thinks of the days when his life was peaceful and innocent; of the heavenly days when a mother's love still guarded his steps, and an unprofaned nature still held him above the dirt and scum of mere earthiness.

"Oh! childhood, thou sweetest time! In thee is truly heaven upon earth, for indeed children live at the

same time in heaven and on earth, and with the invisible cherub wings of their divine simplicity and imagination they keep open for their parents, their teachers, for all those adults who have shed their angel wings, the road between the upper and lower worlds, the communication between Eternity and Time."

III. CHILDREN'S DIARIES, COMMENCED BY BOTH PARENTS WHILE THE CHILD IS STILL IN THE CRADLE.

"From childhood's lips, in tones so pure,
A deep unconscious wisdom flows,
Of nature's truth, of bird and bloom,
Of life, its myths in wondering dreams."

BOGUMIL GOLTZ.

Who gather these pure melodies? Many a mother keeps them forever in the sacred shrine of love; but it is to benefit the child that these mental photographs, the images of its gradual unfolding in character and actions, should be kept with the same religious consecration that the Egyptians used in keeping their diaries. Francis Galton recommends the introduction of family records, so as to gain a scientific insight, as he sees in them the possibility of a control over inherited and periodically recurring family diseases, and unpleasant traits of character. Preyer believed it possible to fully remember our own childhood by being constantly led back to it, and noticing the improvement, in saying

the word "breakfast," which his child had kept perfectly clear in his memory. And Stanley Hall speaks of F. Froebel's request to parents to bind themselves to keep a diary conscientiously, stating in it fully and unflinchingly the physical, mental, and moral development of each of their children till they are able to continue the diary in the same spirit for themselves; thus leading the child to observe with what painstaking love and care his virtues as well as his faults, his talents as well as his lack of capacity, have been judiciously considered and acted upon, would impress on him the everlasting tie of parental love and wisdom. Parents would thus develop the child into a friend with unbounded confidence. *His character being founded on truth*, the child would blush to have to record of himself debasement.

The writer arranged a plan with similar aims for older children of her school, those about ten years of age. Each child had a book in which he wrote at the close of each day the standard of his acquirement and behavior. These books were not kept for the teachers, but for the insight of the parents, or at least the mothers. No record was kept, no tickets were given or examinations made in school. Each child in its desire to know was its own natural stimulant. Prof. Preyer asks mothers to associate with him in records for keeping a careful account of early education and the gradual development of the child from its birth. A lady from Liefland (Russia) met this request. We may be sure

that the intelligence and quickness to test the value of a practical idea will stimulate thousands and thousands of mothers to listen to the soul-voice of their babies, to engrave it forever in the book of life, by placing it in the hands of each child old enough to know himself, and as Prof. Stanley Hall says, in his study of children: "This book should be kept without the child's knowledge, to be given to him at maturity as a guide to aid his choice of profession or calling, or his physical regimen."

Such a course would afford the child a power within himself to enter the battle of life, absolutely different from the inducements with which we lead him usually to success. Far from trying to get the best of all, the child should find out and be led to use his God-given powers for a happy, righteous existence. Millions perish on the road by seeking more than they can ever hold in their greedy grasp. How different would it be if the father and mother, in full confidence and *unity with the school*, would make the entrance into the school *a moral event*; if they would take the record of their child, with his individual propensities, as a guide and stimulant! What confidence would in time grow from such relations between parents and teachers! The physical tie of parenthood would evolve into a deep, morally protecting friendship, making the child cling to them in undreamed love and confidence, when it needs them most, at the period of the first awakening of youthful passions. Happy the father who holds the hand of his son in this important

hour, a picture of beauty and health, when in loving reverence and faith he confesses his own battles with his better self! Happy the father who can prove by the carefully kept records of his son's characteristics that he was prepared for such confession; that he knew, according to its innate propensities, that these hours had to be experienced so as to learn that nothing other than his *own manly victory over his lower self could save him!* Imagine such union between father and son, mother and daughter, not as an *exception*, but as the *normal condition*, and deduct from it the moral influence it must exercise on the coming generations.

CHAPTER IV.

DEVELOPMENT OF AND THROUGH THE SENSES.

- I. Development of the Senses in General. — II. Development of the Sense of Sight. — III. Development of the Sense of Sight by Play Exercises. — IV. Emma Marwedel's Color Play No. 1, called Babies' Fun. — V. Emma Marwedel's Color Play No. 2, called Babies' Ringlets. — VI. Emma Marwedel's Color Play No. 3, called Family Color Play. — VII. Education through the Sense of Sight. — VIII. The Sense of Hearing. — IX. Emma Marwedel's Practical Gymnastics for the Improvement of the Sense of Hearing. — X. Education through the Sense of Hearing. — XI. The Sense of Smell. — XII. Education through the Senses of Smelling, Tasting, and Touching. — XIII. Sense Influence on the Development of Logic. — XIV. Sense Influence on Originality of Conception. — XV. Sense Influence on Imagination and Memory.

I. DEVELOPMENT OF THE SENSES IN GENERAL.

ON the development of the senses depends the development of the mind, and consequently the development of the human race.

Scientific research into the early condition of the organs of sense shows that their development must have kept pace with the general physical and mental development of the human race. A scientific war is waging to-day on the question, whether the lack of an extended nomenclature for color in Homer's writings, though the effects of light are so vividly described by him, proves a deficiency in color-sense among the Greeks. Of no less interest

is the question whether the sense of sight in animals, especially insects, is equal to that of man in recognizing colors, or if their power of sight was limited to the perception of the different effects of light on color, — questions which interest us only as they indicate the evolution of sense development, about which Tyndall says: "If we would allow ourselves for a moment to analyze the ideas of evolution, which means successive growth, improvement, and elevation, we should come to the conclusion that there is still an immense amount of visible impressions awaiting man's cognizance; greater and higher than those he possesses at present." May we not conclude, from this prophetic assurance of Tyndall, that there was a period in which man possessed no sense of color, but only a sense of light and darkness? The comparison of this theory with the records of human sense perfection, which furnish investigation with wonderful facts, especially among savage tribes, and the consideration still more of the results attained in our present institutes for the deaf, the mute, the blind, and idiots, demonstrate to what a marvelous degree the loss of one sense, and even (in the case of Laura Bridgman) the loss of three senses, can be replaced by extra cultivation of another sense. Sense education, on the other hand, for developing man to a completion of his full scale of sense organs, so as to perfect his physical, mental, and moral condition, as an outgrowth of modern science, dates from the latter part of the nineteenth century.

Combined scientific efforts will undoubtedly establish, ere long, a normal standard by which we shall be able to correct from birth, by natural means, any sense deficiency, where at present we depend mostly on artificial means to supply inefficiency of sense organs for daily pursuits, in cases where early training or preventives would have been sufficient. For this work, we appeal to mothers and their earliest associates, kindergarten teachers.

The senses, the sole means by which we ascertain the qualities and differences of objects, are capable of being educated in two distinct directions: either as special functions, their culture beginning and ending with themselves, or as means to man's higher culture. Prof. Preyer calls attention to their slow and gradual evolution in the child; thus drawing the line of demarcation between animal instinct and human unfolding. One cannot help being profoundly impressed by the divinely ordained efforts through which the human infant, according to Preyer's testimony, raises itself from that first low development of faculties by which he gains a dim recognition of the sweetness of milk, through a conception of the differences of things and their relation to each other, to the power of reason, of creative thought, and the formation of habits. All this, too, in the course of from one to two years, notwithstanding the child's lack of understanding of the speech it hears, and of its power of expression by speech. If at five weeks old

Preyer's child showed pleasure at the swinging of some colored tassels, and a few days later at the lights and ornaments of the Christmas tree, it is indisputably proved that at five weeks old the impressions received through the senses were already transmuted into sympathetic emotions, and hence that education begins as early as this. This being true, a grave responsibility rests upon the care-takers of the young being to see that the educational influences are appropriate and adequate. Man is born a whole. There is no subsequent introduction of faculties. A complete man, he lies coiled up in the infant, as the oak-tree in the acorn. His first manifestations are the outcries of his individual soul, to be received with such awe as was shown the oracles of old. "Motherhood" means "priesthood." It is the mother on the divine tripod, ordained to listen to the prophetic oracles of man in the child. Man's higher culture depends on his capacity for quick and reliable transmission of sense impressions, to be transmuted into intellectual judgments or into emotional impulses. The former acts critically; the latter creatively, viewing life affirmatively, instead of negatively, thus dividing the education of the senses into two distinct parts, namely, education through and of the senses.

II. DEVELOPMENT OF THE SENSE OF SIGHT.

The sense of sight, in its use and abuse, recently aroused the attention of the medical profession, of ped-

agogues, and of statesmen. Increasing short-sightedness has instigated investigation and the passing of laws tending to protect the young against our ignorance and the evils of civilization. The following points have been legally considered, and acted upon by the German Reichstag: *First*, the effects of light in the school-room. *Second*, the type print of the school-books. *Third*, the introduction of white slates and boards instead of blackboards. *Fourth*, alternation of manual labor with intellectual. *Fifth*, the shortening of school hours, exercises in field sports, bringing the children under the subdued light of green trees during lessons in natural history, as practiced in the kindergarten, far from books, in the temple of nature itself. The great alarm concerning color-blindness vanished at once when its cause was found to be exclusively the early neglect of the color-sense. Dr. Magnus, Professor of Optical Science in the University of Breslau, makes the following official statement: "Of 12,290 women carefully examined, only thirty-one were found to be color blind, while the male sex gave 3.25 per cent."

These statements coincide with similar official investigations among different nations. He instances the perception of artists as to the possible refinement, intensity, and extension of the power of sight as compared with our present neglect of the education of the sense of sight at home and at school. Prof. Virchow, of the

Berlin University, stated lately before the Anthropological Society at Berlin, that he recommended at each school term fresh color exercises to his young students, when unable to detect red, blue, or brown in black, or yellow, white, or green in gray, while a trained eye detects these differences very easily. He recognized these exercises as of such vital importance as to lead him to present a bill before the German Reichstag, requesting earnest attention to the curriculum of instruction on this point. This importance seems greater, when we see the different official statements of distinguished oculists as to the condition in German schools, especially the public schools, in the total insensibility to and ignorance of color tones, shades, and tints, for which no names had entered their minds.

Observations on the early recognition of colors by young children seem to be rare. Darwin felt greatly disappointed in two or three of his children, who, having reached the age when common objects could be named by them, showed entire ignorance of the names of colors. He came to the conclusion that a knowledge of both name and color was too difficult for them. Prof. Syokalsky says: "No child is born with a distinct function which recognizes a difference between yellow, blue, and red. These functions have to be developed gradually by constant action and stimulation of the sense of sight." Prof. W. Thayer, psychologist,

physiologist, and ophthalmologist of wide reputation, by his proof of the possibility of early color-sense and its educational effects, has served the world beyond measure, at this time, when truth and light on the problem of education through the senses is so much needed. Besides, his proof adds to the theory of Dr. Daly, Professeur de la Salpêtrière, at Paris, saying that while the early use of the soft gray matter of the infant brain is extremely injurious to the healthy growth of that organ, since the gray matter is very watery in early infancy, and cannot bear rapid molecular changes, the sense organs, on the contrary, being intimately connected with the ganglionic or symmetrical system, and producing emotions as a constant resultant, are entirely in the line of normal, childish development.

The great practically approved lesson which Prof. Preyer carried into the world of learning, he carries into a still deeper recess, the heart of the mother, who unfortunately, in her present lack of educational knowledge, is deficient where it is most needed, — at the cradle and in the nursery. What would millions of mothers not give, if they could know exactly how best to occupy themselves with their children? In order to enable mothers to give their babies the requisite color-sense, Dr. Magnus's color chart, the same that Prof. Preyer used with his child, is added to this book, together with an original series of color play exercises, to which

the writer will refer later, leading the child slowly and gradually to development.

1. On differences of color.
2. On differences of names of colors.
3. On differences of shades of colors.
4. On differences of position and direction.
5. On differences in measurement and form.
6. On differences of outline and material.

Prof. Preyer began to familiarize his boy with colors when twenty-one months old, and this boy gave evidence of his knowledge at three years old, by distinguishing nine different colors, each in four shades or tints. Taking for granted that the results Prof. Preyer gained with his boy were from a child's normal condition, the experience of Prof. Virchow proves the unpardonable neglect of the organ of sight in education, to which, however, some attention has of late been given. The celebrated Dr. Farrar, Canon of Westminster Abbey, gave a course of lectures lately at the London Institute of Art. He says that "any neglect of art, as a means of education, will bear most injurious results. Early training teaches reading, writing, and arithmetic, but the much more important matter of instruction in admiration, imagination, and love is ignored, and with them is ignored the culture of the very center from which man grows, his inner life." The children, he says, "who will tell you readily how many pounds of meat you will get for a shilling, have perhaps never smelled a sweet-brier." Let us, therefore, begin with sense and art

education in our schools and homes. At the last meeting of the Pedagogical Society, at Leipzig, Saxony, the inspector of drawing, Mr. Flinzer, spoke of education in color, and referred to the growing necessity for modern instruction based on a psychological plan, proving that human development begins with external objective perception, fostered by analytical conception of form and color. Romanic nations, the Italian, and still more the French, have given special attention to education in form and color, hence they have become leaders and creators in art and fashion. Dr. Magnus says that the precision and ease with which certain people measure and estimate distances with no other instrument than their eyes, cannot be explained or made possible but by an exceptional facility in using certain eye muscles, and that the power of eye measurement which we find sometimes in the utmost perfection among artists and mechanics is the result of much exercise; so that any one applying himself steadily may excel thus. In this sense it was said by Michael Angelo that the artist must have his compass in his eyes, not in his hands.

Prof. Tyndall's predictions concerning the higher development of the organ of sight agree with the statement of Dr. Magnus, that while the usual seat of the conception of color and form is in the center of the eye, early exercises with colors, form, size, and beauty would meet these wants, and are therefore brought within the reach of the baby by the color form game, which is

later described. Prof. Magnus proves the education of the sense of sight by the delicate tints and the harmonious combinations of colors used by civilized nations, compared with the savages and half-civilized; the latter preferring glaring, vivid colors, without any consideration of tones and blending. Moral and practical educational obligations to complete a general development of the individual man, with the special and earliest training of the senses, foremost those of sight, hearing, and touch, demand special effort.

W. Preyer's experiments in teaching the names and differences of thirty-six colors, to a child not much over three years old, demonstrate a great psychological truth in science, which, perhaps unintentionally to himself, must affect in a great degree the pedagogic scientist. Not that the art of retaining facts as early as that period may be called desirable, but as demonstrating the possibility of using sense impressions early, for a general, mental, and moral development, even in the cradle. The capacity of the child thus demonstrated, we may conclude, with Dr. E. Seguin, that "the education of the sense is as useful as that of the mind, and must, if anything, precede it. For what an educated mind can do, without the help of educated senses, is seen uselessly shelved in our libraries; what the senses and the hand, unaided by the cultivated mind, are doing, fills up our stores with coarse products eagerly sought after; and what both the educated senses and mind can accomplish in concert is proudly

exposed to view in the Olympic rivalries of modern nations.

“By this latter process, we will spread, everywhere and without stint, illustrations of (*a*) the kind of superiority of the productions of the epochs during which the senses were developed, even to excess; (*b*) of the harmony of the productions of the epochs during which the mind and the senses received an almost parallel education; (*c*) of the impossibility of using intellectual resources when they are not supported by accurate sensory perceptions; (*d*) of the vagaries of the mind deprived of the criteria which the senses furnish; (*e*) of the rapid degradation of the creations of taste when they are reproduced or interpreted by unskilled hands and senses; (*f*) of the progress accomplished by recent improvements in the modes of mediate or immediate sensory perceptions; (*g*) of the progress expected in art and science from a better training of the senses, and from the necessary addition to our instruments and methods to give more precision to the operation of the senses.”

III. DEVELOPMENT OF THE SENSE OF SIGHT BY PLAY EXERCISES.

These play exercises, which are five in number, are designed to serve as the first means of development of the child in the cradle; and almost to double their value in their influence on the family unity in educational pleasure.

What the mother, father, nurse, and the family at large need is means by which a natural joyful influence toward a higher educational union may be created.

IV. EMMA MARWEDEL'S COLOR PLAY NO. 1, CALLED BABIES' FUN.

In this play, the *first* which can be applied by the mother to the baby, three educational factors have been considered, without the need of language on the part of the child, namely, a development of the sense of sight, of color, and of form.

Both Prof. Preyer and Prof. Magnus have pronounced early and repeated exercises of the muscles essential to the later usefulness and the power of facial expression, proposing thereby what may be called a gymnastic of the eyes.

From this point of view, this play gives ample scope. 1. To lead the baby playfully and joyfully in a gymnastic of the eyes, by following quickly the changed position of the color-forms. It consists of a box containing nine dozen ovate color-forms in the shape of a walnut. Their colors correspond with the two extreme tones of Prof. Magnus's color series, furnishing half a dozen pieces of each color. Precautions have been taken to prevent their discoloring, or being swallowed, or becoming in any way injurious to health. 2. To recognize color by comparison in a most playful manner, so that a child may show discrimination between colors before it is able to speak.

3. To recognize differences in forms, by placing two, three, or four pieces of the color-forms together, changing colors and directions, leading finally to the execution of forms of symmetry or beauty and forms of use. 4. To answer the need of the child, by occupying and developing its power of sight with round forms; its power of vision, according to W. Preyer and H. Magnus, being concentrated in the center of the eye, thus enabling the child from the beginning to carry and retain rounded figures. The play in itself, based on the latest psychophysiological and educational principles, cannot fail, if received and used in the right spirit, to offer continued amusement.

How shall it be played? This is given with the description of the play, but it may be asked to what extent it may become a family play. In some happy moments the baby (which never should be forced, and never compared with other babies, because its quick or slow color perception depends entirely upon innate capacity) is able to use the same corner in which mamma had laid down the color-form previously, and papa being told of this possibility, awaits with tender emotions the first proof of perception of his child. Placing himself at the piano, he promises the baby the touch of a full chord if it does not fail. The baby, though unable to use the language of which, nevertheless, it has a full understanding, is delighted. The baby starts, — yes, it is right, — and perhaps the whole family may repeat the act, as did this

wise and glad papa, when he found his child for the first time following an object with an intelligent conception. The great need of our age is home pleasure in common. Extension of this play offers sufficient means for that purpose.

V. EMMA MARWEDEL'S COLOR PLAY NO. 2, CALLED BABIES' RINGOLETS.

This consists of rings in thirty-six colors, similar to those of Prof. Magnus's chart. They are of two or three sizes, and many of them are divided into halves and quarters.

Its educational aim is similar to play No. 1, supplemented by a few progressive elements, as follows:—

1. The increase of colors by introducing shades.
2. The opportunity to proceed from the simplest combination of symmetrical figures to complicated forms of beauty, furnishing means of enjoyment for the whole family in common.
3. The addition of halves and quarters, which, though not intended to serve the recognition of arithmetical diversities, leads the child to conceive unconsciously the differences in color, size, form, and position.

It may seem surprising that in the play No. 1 the colors presented extremes, namely, the darkest and the lightest of the color. Every object carries a sensation which is stronger or weaker, as the impressions

received differ from each other. The less distinct these differences, the less vivid will be the impression.

Now, experienced teachers daily see how difficult it is to obtain an exact observation or description of the most common objects of our surroundings, even by adults. This is shown by Francis Galton's statement in relation to a description of a breakfast-table, given by a number of distinguished persons, and it is not less clearly demonstrated through the investigations procured by the simplest questions of Prof. Stanley Hall.

Every object appears as a whole, and as parts of a whole, of which every part sends forth certain characteristics, to be impressed separately on the different senses toward the completion of the conception as a whole. The greater the sensitiveness of the different organs, the more vivid and complete will be the conception of an object, in its parts and as a whole.

In the little child it needs the power of will to produce certain motions of the muscles which, though slow, keep pace with the number of impressions which pass from a mere dim sensation to a clear perception, as defined in Preyer's book. He states that his child showed the first effect of light on the sixth day, and that on the twenty-third day he became fully assured that his boy followed a candle-light with his eyes, turning them from right to left, and *vice versa*, — an experiment which he enjoyed both as a father and as a scientist, repeating it more than twenty times the same day. At nine-

teen weeks old it was evident the child followed with his glance some objects passing by, or to be seen in the room.

VI. EMMA MARWEDEL'S COLOR PLAY NO. 3, CALLED FAMILY COLOR PLAY.

This introduces Prof. Magnus's color chart, used by Prof. Preyer in teaching his boy to distinguish colors and their names. It presents round tablets in nine colors, each color being subdivided by four tones from dark to light, making, on the whole, thirty-six colors which are doubled.

They may be used as follows: —

1. In the manner described by Prof. Preyer.
2. In forming symmetrical figures or borders, similar to the patterns in the ring play.
3. In using the colored pencils to imitate the series of tones, as seen in the chart, by producing the four colors belonging to one shade with only two pencils, thereby forming a connecting link between the three successive color plays; the coloring of the fruit and flowers in the circular sewing, and the circular drawing-book No. 1.

"It was on the twenty-third day," says Prof. Preyer, "that I observed for the first time an impression made on my boy by color. He laughed aloud at a pink curtain on which the sun shone. But it was in the eighteenth month that I introduced the first systematic examination of counters of similar shape, but differing in

color. No sign of the power to distinguish color was evinced, though a certain doubt could be perceived." Prof. Preyer then introduced the arrangement of colors presented by his color chart, consisting of nine series of colors, each containing four shades. He also gives an account of his proceedings and success, stating that when the child was two years and seven weeks old he gave right answers about the colors to all questions except one.

We recognize the great value of this scientific experiment to psychology and pedagogics; but as a follower of Froebel's educational principles, it seems preferable that the conception of a mere difference in *colors*, without name, should be aimed at, in order to exempt the still speechless child from memorizing words. The educational aim is to give the child at this age attractive play occupations; to learn to see, not to know; to open its mental eyes for the æsthetic conception of light. Who can tell what came first under the mental eyes of the young painter (he died quite young) who, when one of Rubens's large pictures was stolen, offered to replace it from memory? His picture was accepted, though with reluctance and doubt. But how great was the surprise in artistic circles, when, after recovering the stolen picture, it was found to be the most exact copy in all respects, — in all its varied coloring, grouping, and expression! Undoubtedly, the young artist felt a deep sympathy with the picture itself; but what had favored

his marvelous power of memory and conception? Was it his mother? It was doubtless she, who, kneeling by his cradle, heard the whispers of his inner, his divine nature.

VII. EDUCATION THROUGH THE SENSE OF SIGHT.

Sense influence on the higher conception of the beauty of nature.

It is clear that with an increased sensitiveness of sight to the beautiful, sympathy with nature becomes identical with the conception of beauty in nature. The child who, still in the arms of its mother, sees her caring for the wants of the beautiful plants, and imagines he assists her in giving them nourishment, learns to associate the needs of his own existence with the food, air, and sunshine necessary to plant life, not less than he is led from the simple tone of music to the full scale, from single colors to their shades and harmonious combinations.

Once baptized into sympathetic communion with nature, and the harmony of colors — those incalculable treasures of beauty which our Mother Earth gives so boundlessly to the initiated — becomes his individual possession.

Treasures which flame in a thousand colors, yet are not seen, which sound with innumerable voices, yet are not heard, save by the elect priesthood of poets and painters and song writers, then are brought home to all, for all should be priests in the open temple of

nature. We begin to be well informed concerning the life and customs of savage tribes, yet very little, comparatively, is known of their relations to and conceptions of nature, except that their language contains poetical treasures, indicating their spiritualized sense and dramatic comprehension of nature. Here love, in true companionship with nature, hands down from generation to generation its riches afresh, felt anew in their fullness, because filled afresh by individual experience. The concentration in our large cities, the artificiality of living, the complexity of our wants, the wide field of our pleasures, have led us away from Nature, and still worse from her purifying influences, which offer to man in utter unselfishness all the gifts she possesses. She teaches him a moral truth which, once brought home, cannot fail to elevate and ennoble him.

VIII. THE SENSE OF HEARING.

The foregoing statements have shown to what extent the sense of sight is capable of perceiving differences, practically and intellectually. The sense of hearing possesses similar powers, though its application is less wide. Professional musicians are able to distinguish the difference between two tones, the pitch of which shows a difference in sound-waves of one thousand to one thousand and one, which is equal to one twenty-fourth of a half-tone. Early exercise or special talent is of course needed, to

develop such sharpness and accuracy of the hearing. Not to all men do the gods accord the superior gift of musical talent, but all men most emphatically have the right to claim a thorough culture of the sense of hearing. The perfection of this sense among savages is well known, and the time may and should be not far distant when instruments shall be used to test the capacity of hearing among officials and children, in the same manner as practiced now with the sense of sight. This culture would free our children in school from some of the unjust blame they receive; as Dr. Seguin says, "The culture of the hearing and the touch have culminated in a new enjoyment." The writer has often been surprised to observe the quickness with which children learn to distinguish sounds, after a very few repetitions of plays arranged for this purpose. Not less surprising has been the recognition of the voice by little children blindfolded for this test; and these plays should be played as early as possible.

**IX. EMMA MARWEDEL'S PRACTICAL GYMNASTICS
FOR THE IMPROVEMENT OF THE SENSE OF
HEARING.**

The materials for this consist of ten series of metals, wood, and other substances, which by their differences in size offer extensive exercise of the sense of hearing. This game should be played by the whole family in the nursery.

X. EDUCATION THROUGH THE SENSE OF HEARING.

Singing and speaking are the fullest expression of man, — a free gift, without regard to wealth, rank, sex, or age.

Madam Catalini was received with the same enthusiasm when she was eighty years old as when she appeared first at eighteen years old.

Hardly any nation is without some original melodies, which are, in most cases, traditional remnants of unknown ages. Italians sing, Swedes sing, Germans sing. All these are recognized as musically gifted nations. Singing and speaking raised to the highest and purest art should have their place at every cradle, where the tunes sung should be soul-awakening hymns of sweetness and delicacy. In every home, in every school, in our markets and thoroughfares, sweet sounds should rise like stone walls against the present vulgarity in tones and words. Fortunately, our own country feels the necessity of moral elevation through music; and our Bureau of Education has issued a circular in regard to this subject, which, in connection with similar efforts coming from the headquarters of the Sol-Fa system, will soon bear fruit. To this end the color plays and the ball plays are accompanied by simple tunes.

XI. THE SENSE OF SMELL.

The sense of smell in man and animals has of late received much attention from scientists, and the discussion of the question is still going on as to whether an extreme sensitiveness of the organ of smell may not outweigh its usefulness. The following is a statement of the delicacy of the sense of smell in man, which in animals is, however, greatly superior:—

“The delicacy of the sense of smell has been shown by a series of experiments by Messrs. Fischer and Petzoldt. In a room of 230 cubic meters’ capacity, tightly closed, a small quantity of the substance was thoroughly mixed with the air, and the observer then admitted. Of different substances, it was found that the smallest amount was .01 of a milligram of mercaptan. It was estimated that 1,460,000,000th part of a milligram of this substance was recognizable.”

The spectroscope has hitherto been considered the most delicate of all means of analysis, indicating less than a millionth part of a milligram of sodium; but the sense of smell, in the case of mercaptan, at least, is seen to be two hundred times more delicate. How much more sensitive the sense of smell may be in some dogs we cannot decide, but it must be considerably more acute.

Though we accept the fact that the savage enjoys a greater amount of general sense development, this is said not to be the case as regards the sense of smell, and that

its deficiency is observed as well among civilized as uncivilized races, when not developed and strengthened by use. The case of Julia Brace, who, though blind, was able to sort the wash of the institute through her sense of smell, brings her required capacity almost into the condition of concentrating her life's experience in this one sense. The following are practical illustrations of the possibility of the sense of smell in man: Mr. Moyle mentions a blind man at Utrecht who could distinguish different metals by their different odors; and Martials recalls the case of a person named Mamurra, who could tell by smelling whether copper was true Corinthian or not. Travelers in India have recorded that certain natives, who habitually abstained from the use of animal food, have a sense of smell so exquisitely delicate that they can tell from which well a vessel of water has been taken. It has been related that by smell alone the negroes of the Antilles will distinguish the footsteps of a Frenchman from those of a negro. Marce Marci has left an account of a monk in Prague, who could tell by smelling anything given to him who had last handled it. The guides who accompany travelers in the route from Aleppo to Babylon will tell by smelling the desert sand how near they are to the latter place. John of Liege, when a boy, flying in terror from soldiers in time of war, passed many years alone in the depths of the forest of Ardennes, where he lived upon roots and wild fruits, the presence of which he could detect from a great distance by the smell alone. In the same way he

detected the presence of men long before they came in sight. Dr. E. Seguin says, in his "Education of the Medical Senses": "The profession of the writer enables him to show from it how much the efficiency of our intellectual education depends upon an equally thorough sense training. I premise that the capacity most needed by a physician does not come to him so much from the stores of general knowledge and of professional traditions, as from the ready capability of his systematically trained organs of perception (the senses) and of execution (the hand). The first sense called into requisition in medical practice is that of smell; before the door of a patient is opened, this sense can often tell what is the matter with him. It must be educated by a special curriculum, without the help of the other senses, not only to the point of being able to diagnose almost every disease, at least any group of diseases, by their specific odors, but to that of recognizing when patients and their surroundings are in dangerous *milieux*, affected with concealed poisons, etc."

Our daily existence, greatly improved of late by hygienic science in the art of living, demands emphatically the full co-operation of the sense of smell. We have not learned to consider the lack of this organ as an incompleteness in man. No one can doubt that this sense is to be recognized as one of the most essential safeguards of a healthy and pleasant condition; and that its development should come under the educational

requirements of childhood. To this end the following is arranged.

XII. EDUCATION THROUGH THE SENSES OF SMELLING, TASTING, AND TOUCHING.

Emma Marwedel's gymnastic of smell, called Smell Gymnastics, consists of:—

1. Vessels containing essences of flowers.
2. Vessels containing essences of fruits.
3. Vessels containing essences of medicinal plants.

EDUCATION THROUGH THE SENSE OF SMELL.

In considering the education of the sense of smell, we can readily recall early associations through this organ. Who is it that has never felt hours of love and high resolve, days of friendship and youth, scenes of home and home life, suddenly opened by the magic association of odors? What tender memories are brought back by the fragrance of the first lilac, of a certain rose, of haymaking, of a corn-field, or a violet! These recall to us the simplicity and purity of life, and who can tell how often a soul, about to go astray, has been checked in evil by such means as a bunch of lilies-of-the-valley, this emblem of childhood's love fresh from the woods, once placed in the hands by a loving mother?

THE SENSE OF TASTE.

The sense of taste is the capacity to discriminate between the different effects produced by the contact of substances with the organs of taste, the tongue, and its

seat of sensibility, the mucous membrane. That this capacity varies, nay, more, that it keeps equal pace with the degree of mental and physical development of man, is unquestioned. It presents a condition which, far from its natural intention to serve as self-protection and self-conservation, becomes not seldom a power to which man falls a victim.

As regards the former, it has been stated by authorities that taste, as a continuity of structure in the tongue, has seemingly the power to discriminate between digestibility in telling at once whether a substance will agree or disagree with our stomachs.

Recognizing the animal instincts in using taste and smell combined as a safeguard against injuries, taste demands not less educational consideration than other senses. Admitting *a priori* the possibility and necessity of the development of taste, we may ask, How can and shall we be educated through the sense of taste, practically and morally? 1. Practically: this is accomplished in training the sense of taste by comparison, in placing different substances on the tongue of the child with closed eyes, and by making a substance stronger or weaker by mixing it, using its different degrees of strength as a test for comparative judgment. 2. Morally: by allowing no child to become a slave to the constant satisfaction and consideration of this sense. "It is the first drop that tells," is a common saying, when we see men and women fall below the lowest. Why? Is it the drop, or

the want of *self-control*, which could not resist? When, as it is said, we have a State in the Union which contains the largest number of rum-shops, — consumes eighteen millions of dollars for sugar and candy, and produces seventeen millions worth of gold, — we ask, Is there not a logical connection between these three parts? And would its standard not rise, if indulgence for sweets did not begin in the cradle? It seems as if the world had no comprehension of these logical consequences. The young child tied in its "high chair" is actually *trained*, as Theane says, "to *want everything*," and "always the BEST."

Until we reach out educationally for greater simplicity and frugality, our vices *will not decrease*. In the same degree as we pity a person under the ban of dependence on his whims in eating and drinking, we should learn to honor and respect the man or woman who eats or drinks to live, — a point with which we should impress our children deeply. This excludes, by no means, the *art* of preparing and serving food. Food well prepared and tastefully served is an essential part of home and social life, deserving the best will and the best talents. It is its *exaggerations* which draw man down to a machine of digestion constantly at work.

Our children should know this danger, and be led to avoid it.

THE SENSE OF TOUCH.

While the skin appears to contain the sense of touch, it is, in fact, the nerves which form the sensory or pos-

terior roots of the spinal nerves for the limbs and trunk, and certain of the cerebral nerves for the head, face, mouth, and tongue. It is clear that considering the extension of this sense, and its direct communication with our daily actions, its value becomes as great as our dependence on it. The experience gained by the blind and idiots has taught us considerably of late, yet outside of Froebel's system we have no systematic development for our children. This has to be changed in our common curriculum of instruction, and a systematic training must begin in earliest life.

The fact that a soft touch with a feather on the ear produces greater sensations than a hard pressure, shows the delicacy and sensibility of the nerve-sense. And it was for this reason, namely, to direct mothers' attention to a practical development of the sense of touch, that Froebel suggestively proceeded from the rough to the smooth, from the soft to the hard ball, in his method, thereby opening the widest range for a development in touch. It is therefore expected that no mother in the nursery, no kindergarten, and no school will fail to exercise in the most original and spontaneous, yet most methodical extension, the sense of touch. Even the impression of heat and cold and its intermediate condition, not less weight, size, and shape, become obligatory exercises in home and school for a normally developed child. As regards weight, a special arrangement is made, known as Emma Marwedel's *Gymnastic of the Sense of Weight*,

consisting of a scale of weight of the same size for practical exercises.

XIII. SENSE INFLUENCE ON THE DEVELOPMENT OF LOGIC.

Having commented in our opening sentence on the importance of sense development in the development of the human race, we must not undervalue its relation to abstract thought. Right seeing, right hearing, right feeling, evidently lead to right thinking, right speaking, and right acting. The power of conceiving at once the unity of manifoldness, and the manifoldness in the unity, develops unconsciously a logical conception of all objects. The early play exercises of the child, which, in Froebel's method, suggest the invention of harmonious combinations of form and color, have never from this point of view been meaningless to the writer; on the contrary, they seem to carry a valuable mental training, by no means to be neglected in the nursery. About three years ago, Prof. Stanley Hall arranged, in connection with his inquiries of "What Children Know," a list to be used in Boston for the examination of children entering the public schools. This list consisted of questions concerning animals, plants, human beings, and domestic conditions, and yielded valuable results in statistics. At Kansas City the experiment was repeated, and colored children being included in the examination, they were awarded

the prize. It was thus made clear that the susceptibility to individual sense impression, and that power of imagination which is very strong in the colored race, had caught the logic of things directly from form, color, and use, by experience and *without* teaching. The observations on Preyer's child show how early (at nine months old) the baby reached out for the logic of things (which is identical with the logic of truth), — a reaching out for which we give it, in most cases, nothing, unless indeed it be "a stone for bread."*

Preyer's child was six months old before it followed with its eagerly questioning look any object it dropped on the floor. This demonstrated clearly the equal amount of intelligence and practical exercise which was needed to perfect the sense of sight into intellectual use. All power of perception is measured by the precision and quickness with which similar and dissimilar qualities are perceived in a given time; which, supplemented by refinement of distinction and conception, present the whole foundation of later instruction.

What does not a clever horseman see in a horse, where those with an unskilled eye see but a few points? How much does a physician, an actor, read from the face, the gait, the speech, etc., where an untrained eye

* Sir John Lubbock, referring to the inefficiency of the development of the senses of civilization, as in savage tribes, ignores the educational influences through the development of the senses.

and mind sees nothing? What is disclosed to the botanist in a single plant, when he has learned to recognize its countless treasures, which we do not see, because we were never taught to find them? What does a landscape painter not see, where an ordinary person sees almost nothing, being devoid of a clear conception of colors and their associate tints? Helmholtz, the distinguished professor of physics, demands the earliest color training for children, referring to the existing difficulty in distinguishing the pure blue, in which learned opticians often fail. Recognizing, therefore, the necessity of early sight exercises, no mother should withhold them from her child. For this the ring play is attractive as well as useful, affording ample opportunity to increase the given patterns by new inventions.

XIV. SENSE INFLUENCE ON ORIGINALITY OF CONCEPTION.

Like to the gradual acquisition of verbal expression is the child's learning the mute language of each thing around it. Besides the wonderful power of expressing itself without words, it learns without words the full meaning of things. With this capacity, the child becomes at the very outset of life an original recipient and an original reproducer. Any interference with this inherent natural power results in death to the creativeness of the child, and this is the very reason why a delayed power of

speech, instead of being deplored, should be fostered, since the hackneyed every-day phrases which are taught the child tend to overlay and kill out original perception, and subsequently original description. Especially is this true of objects containing the elementary qualities common to all, and which should be left to the child's own discovery and original classification.

XV. SENSE INFLUENCE ON IMAGINATION AND MEMORY.

Great attention has been directed of late to the power of forming internal pictures, or of "visualizing," as Francis Galton calls it, the scenes of the past, and reviewing past sensations with the aid of the imagination. The permanent gaining of knowledge depends largely on this power of visualizing events. Children possessing this gift not only acquire more easily, but forget less quickly. Modern teaching therefore recognizes in this power of associating ideas, vivified by the imagination, and supplemented by objects or the representation of objects, the true method of all learning. Francis Galton announces the interesting fact that mind-pictures of the kind referred to were characteristics of several members of one family (in this case a curious visualizing of number forms in colors), and that, existing from babyhood, it proved, not only that it had passed into an inherited function, but that it is one of the faculties earliest developed.

Children's plays and dreams consist of introductions

of sense impressions, transmuted by imagination, and stamped with their own individuality; while the ease, exactness, and extent of these active reproductions depend on the nutrition and exercise supplied by surroundings. Aside from being a reproductive faculty, imagination in its highest function combines and recombines original conceptions into creative thoughts and acts. Memory is but the storehouse of connected and disconnected facts and events, of harmonies and discords, of form, color, and sound; in a word, of all mental acquisitions, whether from without or within. Imagination is the transforming fire which fell once from heaven to earth, never losing its double power of blessing or destroying, and is of far graver educational importance than the attention we bestow on it would lead us to suppose. Words cannot tell what divine illumination flashes upon the child in these early waking hours of his imagination, drawing him up and away from all that is base and hurtful; or, on the other hand, what lurid lights may not lend fascination to low propensities which have perhaps been induced by his early associations. Besides a direct educational necessity for cultivating the imaginative faculties through sense impressions, there stares us in the face another urgent human need, to which imagination must respond, if it is to be answered at all; namely, the need of something to aid man in overcoming the bald monotony and adverse conditions of the daily routine of life. The power of retaining and organizing facts, of

associating and disconnecting parts, of changing, combining, and assimilating the details of life, so as to be able to take at any moment a clear and serene survey of special and general relations, is both the sign and the result of the intelligent use of spontaneous imaginative force. Idealizing the impressions of the realities of life lifts man to a higher moral and æsthetic conception of the social condition of all men. No preacher, no teacher, no orator, and no writer can reach success without its magic aid. But most of all is it needed in our homes. The mother, the all-tranquillizing spirit of the household, finds it the gift richest in blessings she possesses, and it is the crown of true fatherhood. So great, in a word, is the potency of imagination in making the home life, all life, beautiful and beneficent, that it should be considered, nurtured, and directed from the earliest beginning of education. The mother should know how to foster it even in the cradle, attaching, as Seguin says, "an idea to every form, giving form to every idea," so enabling little children to receive a physical impression or image, and to store it in the memory, whence they can call it at will, either to idealize it, or to combine it with others for after-enjoyment. In practice, such a training of the imagination is rendered easy by beginning with simple materials on a rational psycho-physiological plan. As regards the development of memory by early sense impressions, we have indicated already the capacity for visualizing facts as the true source of all learning.

CHAPTER V.

THE CHILD'S EARLIEST CONCEPTION OF COMFORT AND DISCOMFORT DEVELOPING EMOTIONS.

- I. The Study of Emotions and Temperaments. — II. Educational Direction of the Temperament. — III. Sense Influence developing Sympathetic Emotions and a Happy Temperment. — IV. Sympathetic Emotions fostering Innate Activities.

I. THE STUDY OF EMOTIONS AND TEMPERAMENTS.

PREYER'S investigations, comparing the temperament of the newly born human being with that of the newly born animal at the same period of life, have furnished the world with most valuable details concerning pre-natal development and inherited propensities. He says: "Very little is known regarding the inherited or acquired functions of the brain; although the truth and importance of these facts are recognized, and the question most important to be considered, is the earliest phenomena as exhibited in each individual case, in order to avoid being confused by varied appearances and opinions. Above all, we must not doubt that the fundamental and spiritual functions which appear after birth, were created before birth, because, if they did not exist before birth, the question of their origin would remain forever unanswered."

Everything goes to indicate a hereditary transmission of sensibility. This capacity does not evolve a new condition in every being out of insensible matter, but it evolves from an inherited quality in the ovum acted upon by different outside stimulants brought into activity, which, though hardly perceptible in the embryo, become distinct in the newly born child. The soul of the newly born child is not like a tablet on which the senses write their first impressions, so that from a unit of spiritual conception the manifold reciprocal united attributes may proceed. On the contrary, the tablet is already filled with many illegible and unrecognizable sounds; traces of inscriptions of countless sensuous impressions derived from generations past. These remnants, defaced and indistinct, make us read the soul tablet without any ciphers, when its many changes are investigated at the very earliest period of the child's life. Still, the more attentively we observe the child, the easier becomes the deciphering of the inscriptions which it brought with it into this world. These, seemingly incomprehensible at first, we learn to see in time, and study in capital letters.

Many of these qualities are never developed to usefulness, so that it is a mistake to presume that a man can develop exclusively through his emotions, his conceptions, and his power of will, by the use of his senses. This would give hereditary influences equal importance with individual activity in psychogenesis. No man can be called strictly self-made, nor is he capable of develop-

ing his psyche by his own life experience; on the contrary, each individual tries to cultivate and renew the experiences and activities of his ancestry. It therefore becomes very difficult to decipher the mystic language of the soul in the child. "My aim," says Preyer, "is to introduce the soul-deciphering as the chief duty of mothers." Preyer recognizes in each individual child two starting-points of development, namely, inherited propensities and pre-natally developed qualities; stating that their existence is merely indicated in the germ, and depends for growth on favorable circumstances. This brings the mother and father at once face to face with the necessity of knowing the individual qualities of the child committed to their care, and their responsibility for the right unfolding of its higher inborn faculties into a good and happy being.

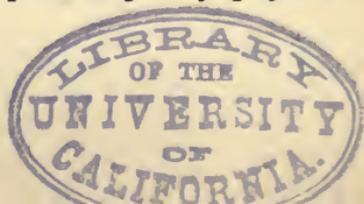
When the Crown Prince of Prussia and his wife became aware of the self-consciousness and tendency to haughtiness of their eldest son, they at once looked for such a change of his surroundings as would counteract this probably inherited disposition of the young prince,—a disposition necessarily nourished by his present circumstances. A parental care directed them finally to a peoples-kindergarten, presided over by a kindergartener of such integrity of character that she would not admit the child as a prince, but only as a child among children, in the miniature society where all were equal. Here the noble mother and father of

the prince watched for many hours a day the desired educational influence on their child of this equality. Power of early insight into the natures of children, with sufficient knowledge and a clear sense of parental responsibility as regards hereditary influences, will induce in parents educational precautions similar to those in training their offspring. The mother of the future will, more than an ordinary gardener, bend the sapling carefully in the direction in which it should grow, not waiting to let his heart draw him before she attempts to bend its then too inflexible atoms. Emotions indicate the most visible expressions of individual conceptions. These develop, according to Preyer, in the following order: first, impulsive; second, reflexive; third, instinctive; and fourth, conscious movements.

Preyer mentions the first experiment with his child on the twenty-third day of his life, using the flame of a candle as a test of conscious conception; the boy followed the flame of the candle with his eyes again and again with such signs of intelligence that the father repeated the experiment more than twenty times on the same day. The boy seemed to experience a pleasant sensation from the shining light of the flame. Preyer speaks also of early sensations of comfort and discomfort observed on new-born babes, and those from three to six days old, by placing unpleasant substances on their tongues, such as quinine, salt, sulphur, and these and pleasant substances showing

the same effect as on adults, though the whole vital act was entirely a reflexive one.

As regards the four kinds of motions, Preyer, referring to their difference, origin, and value, remarks as follows: "The impulsive motions are the least controllable, being fully independent of any peripheric stimulation, and already developed in the embryo. These appear even in sleep. Second, reflex movements depend on peripheric sensations, which in a normal condition follow very rapidly, though the movements are unconscious to the child. Third, instinctive movements based on previously received sensations, needing three associate nerve centers, connected morphologically. The reflex of sensuous impressions create impulsive emotional activities, aiming at a certain point, but unconsciously and evidently the result of inheritance. If a man or an animal makes a motion which was never made before, it is no longer an instinctive movement. Fourth, conscious movements are in their lowest form imitative, depending on sensuous perceptions, and needing at least two associative nerve centers, as, conception of time, including space and pause. Conscious movements are impossible without the participation of the large brain; while the first, second, and third kinds of movement may be made without the assistance of the brain. Preyer regards them as the basis of all existing varieties of sentient movements, of which No. 1 presents purely physical sensations. No. 2, peripheric, purely physical



sensations. No. 3, emotional. No. 4, conceptions. *The study of the child is the man's full understanding of the educational value of the foregoing knowledge.* It is clear that two children, of whom one makes slow and passive movements, while the other answers in quick excitement to every sensation, must differ greatly in temperament, and that a great difference will exist between these two children, both in their self-development and the labor that lies before them. We have learned to recognize differences between the normal condition of the child and a condition of physical and mental weakness, but we ignore entirely those half-abnormal conditions which, not being correct in the beginning, grow worse and become injurious to the child, and consequently to mankind. The temperamental condition of man presented for direction in the earliest period of his life is one of the most important manifestations, because it is based on inherited propensities, and yet it is the one most ignored. Comparing the man of the past with the man of the present, the increase of thought and action is striking. No one can fail to see what educational and social advantages have been derived from the past by the present existing race of men. But, on the other hand, the utter lack of recognition of the rights of others, the blind, restless desire for change, the haste to accomplish, at all risks, the thirst for excitement, for glory and wealth, and the unlimited

desire to gratify the lower passions, without consideration for the rights of fellow-men, in body and soul, are so closely connected with temperament in its hereditary influence, that every mother should devote herself to the study and guidance of the temperament of her child."

II. EDUCATIONAL DIRECTION OF THE TEMPERAMENT.

Preyer says: "The first period of child life is the most uncomfortable one. It experiences hunger, thirst, cold, heat, fatigue, discomfort of position, bad air, pain of teething, and the denied desire to handle objects." He calls attention to a series of motions used by the child to give vent to the feelings, and warns the mother against the theory that a young child is not capable of distinguishing between comfort and discomfort. As long as the knowledge of these facts was left to traditional influence, devoid of scientific truth, though based on mother love and mother care, an excuse could be found for not knowing positively the wants of a young child. If the human being is destined to enjoy at least equal privileges with the now scientifically reared fowls, fish, cattle, and even pigs, the mother of our age can be no longer excused for ignorance in her special sphere, ordained to her by the Creator. A daily paper mentions that mothers seek mental stimulation outside of their domestic life; in the study

of languages, music, literature, painting, and in charitable work; proposing *instead* the attendance of mothers' classes. We are very far from wanting to limit woman's culture, and a broad contact with the interests of the past or the present social problems; but considering the education of a human being, it seems as if woman would be hardly able to accomplish half the tasks which devolve on her at present. It would seem that attending lectures illustrated by able physicians, visiting hospitals, asylums, and kindergartens, thereby learning to compare a normal with abnormal conditions of the child, and by discussing these topics with experienced mothers and nurses, would open to women a field of further study in the science of man, embracing psychology, physiology, history of man, history of education, the study of Froebel, the study of temperance, of crime, insanity, idiocy, suicide, and kindred topics.

III. SENSE INFLUENCE DEVELOPING SYMPATHETIC EMOTIONS AND A HAPPY TEMPERAMENT.

Accepting the idea that the gradual evolution of civilization is repeated in each man, we call attention once more to the creation and elevation of home and family life through the higher emotions and affections. Medical authorities have decided that the greater death-rate among children in our foundling houses, where the infants

are provided with excellent bodily care which is in excess of that of their poor home, is caused by the want of motherly sympathies, of those thousand nameless acts of life-kindling and life-thrilling love, of fondling by brothers and sisters, of sympathetic smiles and laughter. For, to the child, the appropriate nourishment of its sympathies brings life and growth of body and mind; and its lack, disturbance and death. So, too, the monotony of impressions to which we condemn our babies, by putting a shrill, unsympathetic whistle or harsh rattle into their eager little hands, for months without change, becomes unpardonable when considered educationally. The Greeks amused the growing infants with select toys and exquisite music, as if they were musical critics; while we, in phrases like "What's the difference for a baby? the baby won't understand!" or, "The baby doesn't know anything!" are committing an error bad beyond measure in its effects on the progress of the human race. The morning is dawning. Psychology and physiology, including heredity, begin in the nineteenth century to hold watch over the cradle. No longer will it be treated as a mere utility piece, to be pushed into a corner, but to take its place in the midst of the family, like the ancient altars on which each one lays down the highest offerings of his better nature. We blush when we compare our ignorance of child-nature with its own wonderful selfhood; working silently and incessantly, as it does, to procure its mental pabulum and to nurture

its expanding mind. We begin dimly to apprehend the sacred process of its self-enfoldment. The past of its long inheritance, the reflex of the world into which it is born and lives, trembles in its tender organism, escaping in its plays and dreams, as expression of its individualized sense impressions, to be organized and directed. Whoever has observed childish play in its purity, must have marveled at the fullness of thought and poetry which it clusters about the most trivial facts of life.

No worldly wisdom, nor calculation, nor ambition, guides the little symbolizing artist from one mind-picture to another. A few little stones, or dishes, or flowers, or pieces of colored paper, are sufficient to re-create the world of wonders it carries within. Whoever has not felt the fresh living breath of nature, childhood's sacred myths, the lofty dreams of eternal happiness bursting forth in holy flames from its temple of faith and hope and love, whoever has not looked into a child's eyes in such moments of divine ecstasy, has missed the highest baptism man receives from man. This is the time, these are the moods, when, all plastic and alert, the ardent young being is ready to grasp the hand of any sympathetic guide who will lead it into the arena of life. A thoughtful, observing mother knows how easily the youngest child is brought into sympathetic relations with the beautiful through music, sweet songs, softly spoken words, the charm of light and color; and here is the task

to open forever the avenues of beauty and goodness. For this identifying of the sense of beauty with righteousness, as a necessary harmonious connection of parts to the whole, is, in the culture of the child, of most vital importance. Refinement of pleasure, creating refinement of thought, leads to refinement of conduct, forming finally the habit of mind by which man judges his relations to life and the world; and it is on the earliest guidance of man in the child that we rely for the fulfillment of our hopes of reform. Until the state, the community, and the individual are able to concede this point as the early and sufficient preventive of our moral deficiencies, until the education of the *inner man* ceases to be subordinated to the practical need of the *outer physical* man, we shall never evolve into the highest perfection possible to the race.

Almost nineteen centuries have passed under the banner of Christianity, of brotherly love, of forgiveness of others' faults, of justice to all, and we are not far enough advanced to settle our differences of political opinion, except with murderous weapons. Francis Galton relates that when two herds of wild cattle meet, they send out on each side the best qualified animal to fight for their respective parties; they fight in single combat, and their victory is respected as decisive. How much further has civilized and Christianized humanity progressed than this? *We stint the educational fund, but we give a reward to Krupp, and DECORATE HIS BREAST*

each time that he makes an improvement of the terrible guns with which men are to kill their brothers in greater numbers and at longer distance.

- The state punishes with an ignominious death the single man who, even under the stress of passion, intentionally kills another, but the state drills thousands of men to kill thousands of other men, intentionally and in cold blood. Women have always been applauded for the grandeur of self-sacrifice with which they have girded on the swords of their husbands and sons, to fight for enthusiastic conviction; but is there not a higher grandeur in woman's extirpating in the cradle the *very spirit of murder*? Mr. Galton speaks of the blood terrors experienced among half-wild oxen in South Africa, on passing some spots where a cow had been killed by a bear. They seemed maddened by the smell, and performed a curious sort of war dance. In contrast with this, he speaks of seeing a well-dressed child, with an innocent look, about four years old, poking its finger into the bleeding carcass of a sheep hanging by a butcher's stall, while the nurse was within; and also of nurses with children of all ages watching unconcernedly and even with amusement the feeding of living animals to the wild beasts in the Zoölogical Gardens, in London. The children's indifference to the terror and anguish of the helpless victims was the painful element in the spectacle. From an educational point of view, how much more highly civilized the savage women of South Africa may

be called, whose attachment to their domestic fowls is so great, their sympathy so tender, that not even for money will they let one of them be killed; identifying themselves socially and emotionally, as they do, with the life and pain of these dependent creatures, and with the life and pain throbbing through all being.

Preyer's little boy at two and a half years old, having not quite finished breakfast, was about to take another biscuit, when his father said to him, in a commanding voice, "My child is not hungry and must lay down his biscuit and eat no more." The child obeyed this command without a murmur, which showed the weakness of his will. Yet that Preyer's child had a will and a strong self-conscious will, as every child *should* have, is shown by his father's account of his obstinacy, in crying, and throwing himself on the floor. These two facts suffice to show the necessity of a clear conception of *hereditary* inclination. When Preyer was sure that his child needed nothing, he let it cry for twenty minutes, to have it learn by experience that its crying was useless, and so prevent its repetition. At such times especially the child needs the educator's thoughtful guidance. Children, far from being indulged, should be carefully strengthened, their future character depending greatly on the earliest training and exercise of their will-power. Obstinacy and contradiction are in most cases, when not inherited, the result of early educational mistakes. (See "Education in Japan.")

The exercise of obedience, that is, *respect* and *reverence* for the experience of the educator, cannot begin too early. Preyer says he experienced no opposition from his boy of four years old (the time when he had finished his book). The demands for obedience, he says, should be based on the example offered, not only in being strictly truthful, but in being unchangeable in our commands, and in watching the slightest deviation from them. They should be based on the mildness of love, justice, reason, and necessity, and so will impress even the baby as a just submission to law; showing that there is in general an innate sympathy with righteousness in the child. To develop this no mother should fail to impress her child with the underlying reason for her request, avoiding all unnecessary restriction or prohibition, which leads sometimes to the unpleasant consequence of disobedience. (See Herbert Spencer's "Education.") Higher conceptions are awakened by carefully selected impressions, developing and maintaining higher emotional feelings; directing the child's will and desires early to the formation of a generous, unselfish character. English friends of the writer, careful educators of their children, took pains to keep their baby in a room where the mother could always watch it. This was done to prevent the child from expressing its will by crying. As soon as the child awoke from sleep, its wants were attended to, and it was met by loving,

familiar faces and its happy mood thus systematically fostered by serenity, love, and attention in its surroundings. How many thousand hysterical women might thus have been saved from their painful condition in relation to society and the human race, by not transmitting this evil to other future generations!

The writer has observed that German children cry the most. After these are the English children; then the French children; and American children cry the least of any, especially those born in California. An unconscious direction of the child's individual freedom of the will, and the out-door life, doubtless produce this result. The surroundings are not less influential on the child's quietness. In France and America, families are much smaller. This gives the newly born child the privilege of quiet environment. It prevents a multitude of too early and too violent sensoric emotions. The plastic features of the Oriental races, the perpetuation of the Roman nose among the French, and the production of the Vulpine nose of the Americans, and their fine plastic features as a race, seem to result from this early period of undisturbed and unemotional growth. It is by no means the intention of the writer to claim an absolute truth for these opinions, but it is certain that this period is the starting-point for all future mental diseases, such as idiocy, insanity, and crime, and should be considered with all the information our age is at present prepared to furnish.

Jean Jacques Rousseau speaks of the torture to which a young child is condemned when brought up in luxurious surroundings, having the constant craving to touch things it can never reach. This shows clearly that children born in humble conditions, and still more, those born under the influences of a half-rural life, are those who regenerate the world by their higher physical and mental powers, which city life so mercilessly deteriorates. It is evident that in acknowledging the influences of national, family, and temperamental types, we admit the influence of habits of unconscious imitation and inherited predispositions. In this idea Goethe sanguinely predicts a race of children born educated, and may he not be right? In the child we deal with a self-conscious and self-willed human being, unable to speak, and yet often, indeed almost always, ignored in its sign language. Who can tell the cravings and disappointments and heart-breaking rebukes the child's efforts meet? People say, "It only puts things in its mouth, or throws them on the floor." We ask, where should it put things, and what is more natural? Is not the mouth the seat of taste? as Froebel says, "The central organ of its short life's experiences. Besides, it has a desire to help itself in teething." After a month's longing, it may get what it has been craving. Once in turning it round it drops it and it remains unreturned. This one experience may lay the foundation of its obstinacy, willfulness, and rudeness. Who can

tell? All we know is, that a child two months old already gave preference to a certain tune; so its likes and dislikes for persons and objects were equally strong. And what was worse, it has not the power of expressing them. May it not often happen from this cause that naturally and gradually impatient manifestations arise which grow later into permanent ill-temper? It is natural that a child born in the eighteenth century must differ from a child in the nineteenth century; that the child of the nineteenth century should produce different results from its earthly experiences from the child of the past, and that the mother and father should prepare their child in the nineteenth century for higher conditions than those of the past. Our over-excited mental condition shows plainly the errors of the dark side of advanced civilization. And herein must be said again, and cannot be enough repeated, that until we abolish ignorance and the tread-mill fashion of actions without individual power of conception by women, until woman learns to regard man as the product of evolutionary development, and until she is able to comprehend that she, as the mother of the race, is by nature and functions divinely selected to work for the ideal better and happier man,—until this condition exists, no lasting progress can be expected.

IV. SYMPATHETIC EMOTIONS FOSTERING INNATE ACTIVITIES.

Preyer states that grasping movements, accompanied by expression of attention and pleasure, were made by children from four to five months old. From this period up to two years old and over, we deal with a self-conscious and self-willed being, unable to speak, yet whose sign-language is almost ignored. The child throws the spoon on the floor to enjoy the effect of sound. It stretches out its little hands in sympathy with all it sees and hears. What is its answer? A rattle, a ring, or a gray, unattractive ball is the meager share which falls into poor baby's eager hands from the bewildering variety of the glorious high-colored riches around it. Some one says, "Give it anything; baby does not care what it is." This may be true in some cases, but doubtless this injustice or misapprehension often leads to ill-temper in the child. Think how the celebrated naturalist, Edwards, the son of a Scotch cobbler, was misunderstood, when he was deprived of all clothing but his nightgown, in the cold month of November, in order to hinder him from going to the beach to get crabs, fish, and shells to serve his investigations of nature. Notwithstanding, though not yet four years old, he went to the beach, and filled the lower part of his nightgown with shell-fish, etc. Psychological records demonstrate the absolute necessity

of the earliest satisfaction of the emotional and sympathetic feelings of the baby, including harmonious and joyful surroundings, to break the monotony of its life.

Rousseau, speaking of the better health of the children of the middle classes, and the fewer vexations and irritations in their early life, says: "What artist would remain indifferent if an unskilled, careless hand should misuse the strings of his instrument, bringing from it confused, unmusical chords, and inharmonious vibrations?" Does not the nervous system of the human being equal the most delicate instrument, and demand as much skill in manipulation as a fine harp or violin? With the increasing study of early psychological development, the importance of the right conception of fundamental life becomes very great. According to previous statements, we find the innermost germ manifested in the activities of the emotional and sympathetic feelings. No later period in life can be compared in its enormous power of perception, awakened by sympathy and imagination expressed by language, concluded by individual abstraction and comparison, with that demonstrated in the mental and physical activities of a child under three years old; and this not as the result of intellectual capacities, but through sympathetic attraction, awakening an eager self-activity, which retains the impressions of those objects which meet its feelings.

Can we imagine a single day with its hundreds of new impressions and experiences for the child, a single walk of a three-year-old child? Can we imagine all that is unknown to it and has to be investigated by its own powers of observation, — the houses, their divisions and uses, the animals he meets, the flowers and trees he sees, grandfather's house, grandmother's peculiarities, the dealings of the servants, and hundreds of other matters? The importance is not alone in the amount of practical knowledge gained, but in the higher spiritual connection of individual conception with the outer condition of things. We all enjoy the beautiful flashes from the inner workshop of our babies' minds, in molding the outer world to suit their own fancies in word and action. How rudely and misunderstandingly we check and shorten this period of originality as to everything it sees, by seeking to make our baby boy or girl at once into the desired "little gentleman or lady"! The writer was sadly impressed with this, on seeing once, in a restaurant, a little girl not yet able to speak, who had been made to resemble a perfectly trained lady, and what was worse, she was aware of it; she held and placed her spoon with one finger raised, took crackers with the tips of her fingers, wiped her mouth and fingers, and folded her napkin like a grown person. In short, in her every action conscious artificiality was shown, and what was still worse, it was to the delight of the company. Who

can estimate the bad consequences of leading a child so early out of its individual nature, forcing it into a dead, senseless fashion before the exercise of its innate powers of forming and using its original, creative, sympathetic feelings,—at an age when individual conception and impulses should be left entirely free from outward restraint or misdirection in learning grown people's artificialities and conventionalities? The child should be unconscious of observation, save when it is necessary to check it for actual wrong-doing. We cold-hearted, uninterested grown folks make our children suffer from our own mental conditions. Our own indifference, ignorance, and selfishness may often be traced to the fact that no inward warmth or light was kindled in us by early cultivation of our sympathetic emotional feelings. Here the question may arise as to whether a child should be constantly furnished with new objects to its hands, making it believe that everything was at its command. Not so; yet no human being can be taught to exercise higher feelings toward its fellow-being before it can call something its own. This is manifest in the child's instinctive desire to make everything its own. But as soon as this disposition goes to the extreme, the child should be induced to give at least a part of its possessions to others, making the idea of *mine* and *thine* at once clear. *Possession* as well as *desire to get*, both need educational direction.

Many bad habits arise from inherited dispositions,

but very many more entirely ignored by parents are caused by idleness, the waiting for food, and most of all a misapprehension *of* and disregard *for* the child's first desires. The sucking of its fingers or blankets, or biting the nails, is the result of neglect. Who knows the straits to which we drive our children by depriving them of their sports and plays in the open air, and of such right companionship as is needed to satisfy their vivid imaginations? And the writer's experiences have been such as to prove that a few weeks of isolated, in-door life may forever destroy the morals of the child. The glowing appreciation of a toy leads the child to magnify its qualities almost into an ideal. This association of toys is handed down from grandparent to grandchild, and who can tell the many feelings and domestic virtues clustering around such toys? Unfortunately, the restlessness of the present age, the narrowness of the homes, the cheapness and changing fashions even in plays, destroy the life-germ of these associations. Even the glorious period of pocket treasures is in danger of dying out; the poor boy and girl are left to the mercy of ready-made clothing. Yet what a world of study of children's nature is offered by these hidden recesses of mind and body! What sacred rubbish passes from hand to hand, from mind to mind, on the waves of imagination, curiosity, veneration, mystery, and the desire to have and to know! What ideal beauty does not a child's mind find in a broken

handle of a cup, a piece of colored glass, a string, a nail, a shell! It is the life within the child that grows and glows in sympathy, knowledge, care, and generosity through these mere nothings, toward that great brotherhood of universal existence, these treasures often forming its first step to classification. Mothers do not always see the bright side of this, but the kindergartener, half a child herself, understands it all. For instance, a little boy about six years old once took from his pocket a little envelope not two inches long. It had a stamp with a white dove hardly bigger than a pea. "That is from last Christmas," he said; "McKay" (his brother, four years old) "gave it to me; I kept it since last Christmas." It were well if all enemies of pockets, of hidden treasures, and relic drawers could have seen the expression with which he spoke these words. The tiny stamp bore a flying dove. What impressions may the child have gained from this simple dove? All the bird stories he had been told by dear mamma and at the kindergarten he saw incorporated in this picture, reading them over and over again in his own mind. Children are poets, — poets in perceiving intuitively the harmonious association and beauty of their surroundings. We should strengthen this gift, which chisels silently but fully the moral and intellectual evolution of man into a freer and higher conception of life, leading him back to nature, by early sympathetic simplicity instead of intellectual negation.

CHAPTER VI.

EMOTIONS LEADING TO POWER OF WILL AND INDIVIDUAL ACTIVITIES.

- I. Sensoric Emotions leading to the Development of the Power of the Will.
— II. The Power of Will directed and purified by early Emotional Impressions. — III. The Power of Will demonstrated by an Innate Desire for Individual Activity. — IV. Fried. Froebel's Educational Method of using the Child's Innate Desire for Individual Activity.

I. SENSORIC EMOTIONS LEADING TO THE DEVELOPMENT OF THE POWER OF THE WILL.

BEFORE attempting to direct the attention of the mother educationally to the successive development of the power of will, a previous study of the muscular movements, directed and analyzed by Preyer, is supposed to have taken place. Though these intuitive motions differ in every human being, certain motions which existed before birth continue after birth. They are impulsive and independent of will, — an organic process resulting from the center organs of the nerves situated in the spine. They are active without any previous peripheric irritation on the sensoric nerve. To this class belong the frequent motions of the child's legs, arms, and fingers. The activity of a free will is not possible before the development of the power of conception. Repeated sensations and comparison of emotion are necessary to discriminate between comfort and discomfort, before any distinct preference in

the act of a conscious will can be shown. The newly born child has no preference, and therefore no will. Without experience of self, without comparison of emotion, it is unconscious of outer effects. The will of man is not merely the product of knowledge gained by self-experience, but by learning to adjust his habits and motions to general needs. To judge the progress in development of the perceptive and executive powers of the child leading to the evolution of its will, requires a study of every motion. "I present," says Preyer, "my observations on my own newly born son and those of others, on the motions indicating the growth of will-power. It is impossible to recognize the will of the child in motions of mere muscular attraction, such as closing of the eye, or motions of the lips and tongue. But these become reflex motions when resulting from impressions of light, sound, or touch. The execution of such motions is, at the beginning, quite slow, and though their quickness gradually increases, they differ from those of the adult. This may be attributed to the fact that the connections are not fully made, so that these reflex motions have to travel a roundabout way. Any sensation strong enough to produce irritation will affect them. Action of a free and independent will does not exist before the development of the senses is sufficiently advanced to distinguish the qualities of different impressions, and to feel each impression separately, with the power of localizing them and comparing one with the

other, in order to recognize difference in space and time. This is the result of cause and effect, and finally leads to the conception and formation of will and idea. Without the activity of the senses there can be no sufficient concentration in form and idea, for the power of will is actually inseparable from the emotional effect on the senses. The will ceases when the senses are inactive, as in deep sleep. This mutual dependence does not prove that the activity of the senses includes the power of will. On the contrary, the numerous impressions transformed into conceptions are turned into motoric movements, before the child is capable of directing its definite efforts; and it is owing to the repeated impulsive, reflective, and instinctive sensations on the center of the motor nerves, that finally a co-ordinate and modified conception is developed."

II. THE POWER OF WILL DIRECTED AND PURIFIED BY EARLY EMOTIONAL IMPRESSION.

Close observation has revealed that the movements resulting from free acts of the will are at first involuntary, and lead to a conception of facts. In the child's first six months, having learned a number of motions, it finds that the number of muscular contractions of which it is master does not sufficiently answer the expression of its enlarged and more complex desires. Therefore new combinations are formed for new associations; showing for the first time direct efforts to execute voluntary motions intellectually. "This was

proved," says Preyer, "in my child at four months old, when taking its food from a bottle, it held it." The child not only originated his motion, but it co-ordinated it with its purpose. The important fact, that "will" consists in a reciprocal activity of conception by the use of motions, isolating, combining, repeating, modifying, and hastening them, explains the great difficulty under which the child begins its experimental activity; that is, the child has to teach itself by experience. Any act of free will demands attention, each concentration of attention forming an act of will. Preyer says: "In the seventh and eighth weeks I became convinced that my child showed attention. But an independently directed attention to an object, and occupying itself with it, did not occur until it was four months old, when it noticed its own picture in the looking-glass." To control and direct these motoric conceptions at this early age becomes the work of education. Very few mothers follow intelligently this wonderful development, and still less are they capable of directing the child's will-power to intended exercises. Some mothers have learned the necessity of controlling the earliest habits of their children, good or bad habits being so easily planted at that age. But the child needs more than this. It requires not merely the *subduing* of the will in *obedience* from the first, nor does it require an *arbitrary* direction of its will, which would be the first step towards suppressing its originality and spontaneity of action.

The natural submission of the child's will, and its blind faith in the judgment of others, *are an appeal*. It shows its aptitude for learning. Its perfect obedience at this age is because of its small amount of clear self-will, which is similar to the hypnotizing condition of adults. As if to supplement the child's want of self-will or its marvelous powers of imitation, together with its intense interest and observation of the manners and actions of those around it, this power enables even a very young child to excel in accurate imitation of accent, pronunciation, and intonation of many languages. Domestic animals also show these imitative capacities. Dogs and cats acquire the peculiarities of the different nations among whom they live. Hence the saying in England, "The dog barks as his master speaks." The first impressions make the most lasting effects on the child. Therefore, educational influences which transmit good or evil results from generation to generation cannot be too earnestly studied by mothers, for with them lies the physical, mental, and moral development of the child in the cradle. The world begins to recognize this as the dawning truth of the age.

III. THE POWER OF WILL DEMONSTRATED BY AN INNATE DESIRE FOR INDIVIDUAL ACTIVITY.

The most superficial observer of man and nature knows that no living organism, of even the lowest order, is ever absolutely inactive. In each plant and animal

form, in spite of the apparently lifeless stillness of rest, there exists, though unobserved, a continued activity, preparing for the next step toward perfection or destruction. The seemingly dead plant is preparing the fresh sap for new growth. In spite of the winter sleep of some animals, the activity of their organism is not annihilated, and their physical activities return with the warmth of the sun. The words *life* and *activity* may be considered, therefore, as synonymous, as life does not exist without activity. In plant life we call this activity, whether justly or not, "vegetative powers"; in animal life, "instinct"; a conscious use of activity designed to accomplish a definite result, by means of distinct efforts, we call in man, labor. Prof. Preyer refers constantly to the labor or activities of his own and other children for their mental and physical development, by instinctive movements. The opening and closing of the hands, the almost perpetual motion of arms and feet, prepare the strength for use of the muscles as well as for gaining experiences in space. Preyer tells us that to this end the instinctive habit of throwing things in all directions observed in his boy belongs to all children. His child's lack of knowledge of distances was shown at two years and a half old, when desiring to hand a piece of paper up to his father, who was looking out of the second-story window; this was also shown in his continued activity with an elastic glove, which he used as a toy, studying the effect of expansion and

contraction, and when playing with his mother's hair; all these activities being experimental and educational to the child. Preyer mentions the considerable time necessary for this purpose. How often must the child grasp in vain, with his little hand, that sensitive instrument of human development, before it can reach or hold the desired object. And this is because it has to teach itself, by repeated experiences, a conception of direction, distance, muscular contractibility, and weight. Nothing is less understood than the child's instinctive impulse to handle everything it sees. If the opposition to the satisfaction of this instinct was based upon the fear of leading the child too early to an intellectual development, scientific facts would need to be consulted; but unfortunately the child falls a victim to this opposition of one of the most important factors of human self-development, the order of which is, according to Preyer:—

First. Activity of the senses, awakening emotional feelings.

Second. Activity of the emotional feelings, connecting and disconnecting impressions.

Third. Activity in comparing impressions in space and time, abstracting individual feelings and actions.

Fourth. Activity in controlling individual feelings and actions, by force of will and reason.

Fifth. Activity in developing consciousness of selfhood.

IV. FRIED. FROEBEL'S EDUCATIONAL METHOD OF USING THE CHILD'S INNATE DESIRE FOR INDIVIDUAL ACTIVITY.

It is interesting to compare the conformity which exists between the previously cited psycho-physiological conception of the innate activities of the child, by Preyer, with the philosophical and educational conception demonstrated by Froebel's developing principles. To him we owe the demand to connect these instinctive activities with the earliest education of the child, leading it gradually and methodically from unconscious to conscious play, and from unconscious to conscious labor, demonstrating the so-called "new education" with its claim "through work to work," and knowing by doing. Admitting that the child's activities, as revealed by its nature, were received in all ages with the instinctive genius of mother's love and mother's care, he made the dealing of the mothers with their babies a practical study. Not among conventional women, but among the most natural, simple, loving mothers in the forest of Thuringia. Here Froebel found ample material to furnish ideas for his mother and nursery songs, his ball and round games.

Prof. Hermann Poesche, one of his disciples and a distinguished trainer of kindergarteners at Berlin, wrote a very interesting essay on the antiquity of these songs. The songs and finger plays prove the possibility of

early communication and of impressing the child educationally with its surroundings, instilling meaning by sounds and motions, when words are not understood, thereby laying the foundation of a lasting play activity. These play activities Froebel classes as follows: *first*, the innate love of the beautiful; *second*, the innate love of play; *third*, innate love of music; *fourth*, innate love of society; *fifth*, innate love of forming and shaping; *sixth*, innate love of building and constructing; *seventh*, innate love of cultivating the ground; *eighth*, the love of the spiritual. It is not our purpose to refer in detail to the means he proposes for gratifying this love by leading the child to occupy itself with the objects it naturally craves. His aims are to give the opportunity to the child to express its higher spiritual qualities in its play activities, at an age when the nature of the child can in no other way be brought to light and knowledge, and in no other way controlled and directed. Dr. Tiregoff says: "*En prenant soin du berceau de l'homme en instituant les jeux de son enfant, en lui apprenant appeler les premières paroles les femmes deviennent les architectes principaux de la société, dont la pierre angulaire est posé par leurs mains.*" In taking care of the cradle of mankind, adjusting the child's plays to the first words it utters, makes women to be the architects of the age by laying the corner-stone to the social structure. The plasticity and elasticity of the psycho-nervous organization of the child makes its cul-

ture and life perfection inseparable from its earliest conception and direction; a plasticity shown clearly in the learning and use of one or more languages, besides the exact meaning of words and their connection with persons and objects,—a capacity which considerably diminishes in later years.

This educational phenomenon needs grave consideration, in order that we may be just to the individual, and to mankind at large. In this sense, the education of the human race rests on the woman. But as long as woman stands outside the platform of logic, and independence of thought; as long as she remains indifferent to the great questions of the time, that is, the welfare and happiness of mankind, of which she and her children are but a part, both will remain narrow, selfish, and indifferent toward the higher religion of the one great brotherhood, "in the elevation of the human race."

To Froebel not a moment of child's play activities is insignificant; he requires them to be used methodically to develop the power of will, emotions, and intellect, and this at an age when neither words nor prohibition can be serviceable. When Preyer said to his child, "You are not hungry," and it laid down its biscuit, his commanding words controlled its will. This shows that its will-power was still feeble and flexible, and proved its aptitude for direction.

The practice for the mother consists not so much in using just such means, but in a systematically arranged

method of principles in accordance with the nature of the child and its educational environments. This is not so difficult if both parents devote themselves to it with conscientiousness, being careful not to do one thing and say another, or to say one thing to-day and contradict it the next day. No other result but damage to the will and character of the child can be expected, if it is left to ignorant, unprincipled, and inconsiderate nurses, or if left to parents who have neither conception of, nor preparation for, their high office. The main point of educating the will lies in the living of the parents with their children. "Let us live with our children," is Froebel's motto, expressing the idea that even the living for the children is insufficient. We should live with them, laying problems in their way to be solved, requiring the creation of will, as well as the suppression of the will, of thoughtfulness, of self-denial, kindness, justice, steadiness, making our own actions illuminated images of perfection, which the child is sure to feel. The elements of repressive movements of which Preyer speaks are of great educational importance, in connection with the auxiliary virtues of attention, control of will, cleanliness, order, truth, obedience, and reason. A neglect of this may become injurious to the whole character, as want of insight and good-will may lead to shiftless, capricious actions.

Modern pedagogues attempt to secure moral education by manual education, by studying the innate play

activities which need to be controlled morally in the cradle. The productivity of the baby harmonizes with its growing power of reason, imagination, emotion, will, and bodily strength. Educators have to depend on the amount and direction of this strength. Meanwhile the restless, unsteady child has to be brought in contact with but a few objects, prompting it by a careful insight and direction to gain the habit of steadiness. The slow, lifeless child needs to be animated and urged. Froebel's occupations are adapted to the average child's temperament, and to a slow gradual unfolding. Simple as they are, they form a unity, to reach successively the wider plains of individual conception and creative activities. All higher pleasures of existence rest on and result from these inborn creative forces. The child conceives them more easily and clearly than in after life. To gratify the creative forces each step forward follows logically the last step taken, reaching out for perfection in each and all. The terminal point, according to Froebel, is directed to play activities. Individual activity connects the very young child with the outward world. Its experience consists in controlling and being controlled. These lead the child into the arena of the cultivation of social virtues. The child delights to be useful. Its own activity becomes its best mentor. Words are not needed; self-experience and direction suffice. The child longs for success. Every success strengthens its powers, every failure weakens them. Education directs the will

and action into the success of the true, the beautiful, and the good. What our children need is animation. Inborn energies to action and to understand things die for want of animation. Here rich and poor stand on the same footing. The writer's experience in this respect forms one of her life's griefs. As the instinctiveness of the soul forces rests on unknown spiritual strength, so the instinctive creative forces, even in the child three years old, rest on the unknown relation of soul to soul; and no one feels this more keenly than the child.

**V. "BABY'S DELIGHT" BALL PLAYS, ACCORDING TO
FRIED. FROEBEL, PARTLY ARRANGED BY EMMA
MARWEDEL.**

The play with the ball was known among the ancients, where it served through all stages of life for pleasurable recreation and gymnastic exercises. To them, physical education was an auxiliary science to poetry, music, history, and oratory. The ball used for this purpose passed from the hands of the baby to those of the poet, the artist, and the philosopher. The Teutons made ball plays national, and their ball houses, built expressly for the purpose, were found all over Germany; until, at the end of the sixteenth century, billiards supplanted the other more manly sports. Ball plays have been used in various forms in the latter part of the last century, and are uniting the two sexes to-day in natural and healthy exercise. Dancing parties

seem to have outgrown our realistic sense of amusement, and make room for a new genius in play, giving the two sexes natural pleasures in the open air and broad daylight, in which the beautiful Greek ball figures in the front rank. The introduction of the ball, the typical form of life and motion, as the first educational toy of the baby in the cradle, is of recent date, and is due to our great master, Froebel. Its simplicity of form and attractiveness of color and motion are the best means of awakening early attention. But the still greater importance of the ball plays consists in the mental unity of love and joy developed through these childlike play communications between mother and child. Day by day, step by step, she perceives the growing intellectual powers under her affectionate plays, doubting if it be her love, her play, or the ball that affects her darling most. As for the baby, it lies in its very nature to use the ball like any young animal; to roll it, to toss it, to jump after it, finding in it the magic attraction of motion and emotion, life in life.

The seven cards contain thirty illustrations and exercises for earliest ball plays with the baby, called Baby's Delights. They are not lessons, but soulful and mirthful plays for the home circle, needing the sweetest voice, the best speaker, and the merriest laughter, while the cards explain themselves. The following may serve as hints: first, keep perfectly rhythmical measure in all motions, in speaking and

singing. Second, while good singing is essential, good speaking is of almost greater importance. The writer, being amazed at the singsong manner of reading in her elementary department, gave much thought and effort to find the cause of this bad habit, even among children carefully watched and directed. Suddenly it was made clear; the cause was Mother Goose's rhymes, which, putting the accent mechanically on the last syllable, created a vicious elocution, a habit transmitted from one generation to another. Nothing inspires a child (even animals feel the same effect) more than the modulation of the voice,—the soul of the words. This no one is more capable of perceiving than the child; and if for nothing else, each mother should be prepared to be a soul elocutionist rather than an art elocutionist, speaking, singing, and asking with facial expression. If you cannot perceive the electric flashes passing between your giving and the child's taking, your efforts are lost. Never demand the attention of the playing child longer than it is willing to give it.

Play depends on creative dispositions and impulses, which *are free born*, never forced. The rhymes accompanying the illustrations are collected from many sources, wherever they were found, without taking time to ask permission to print them. Some very graceful little gems are original or translated by Mary G. Campbell; some were boldly transferred from Miss Peabody's little book of ball plays; while the music comes from the

distinguished composer, H. B. Pasmore, San Francisco, and Dr. N. Batchelder. In order to find a normal type to answer a methodical unfolding of the human being, and to satisfy the natural desire to play with and to enjoy colors and motions, Froebel, the pedagogue, introduced as first toy gifts the soft-colored worsted ball, psychology stating that with its first entrance into life each child is self-experimentally active through its senses, and that, after a lapse of a few months, it becomes attracted by color and form, supplemented by a sensation through which a conception of position and direction is early awakened. But with that great step forward in mental development, by comprehending itself as a whole in parts, and parts subjected to a whole, the child experiences connection and disconnection, and relative conditions, gaining successively the idea of space, shape, and time, developed by experience in its own existence. Recognizing itself as a whole, the child desires a whole; steadily refusing a part of the whole.

The ball, in the order of its simplicity in form, its attractiveness and connection with all forms, is related philosophically, symbolically, analytically, and typically, as the nucleus (egg-shaped) with all life. Therefore Froebel selected the soft worsted ball, presenting in its simplicity the greatest manifoldness, as a fundamental basis, from which the child is led by right seeing, right feeling (handling), and right hearing, to experience an extensive series of sensuous impressions.

First, relating to the *shape* of the ball; fruit, vegetables, flowers, seeds, leaves, eggs. Second, relating to the *motion* of the ball, indicating position and direction; up, down, right, left, middle, front, back, over, under, high, low, here, there, near, far, behind, between, coming, going, rolling, jumping, turning, swinging, throwing, catching, hopping, creeping, stopping, running, knocking loudly and knocking softly. Third, relating to the *color, surface, size, and weight* of the ball; rough, roughest, smoothest, large, smaller, smallest, heavy, light, lightest, with shades of color. To accomplish this, Froebel urges the mother to provide herself with six balls. With four or six balls the mother begins her lovely task. Hanging the red ball, on account of its brightness, over the cradle of her child, she directs his attention to it, till he follows it with his eyes, by swinging the ball forward and backward, keeping perfect time and giving her explanation either in rhyme or prose. What a family delight will be the higher conception of these efforts by proving the normal condition of baby's senses, in hearing, seeing, touching! The happier and livelier the manner is in which the sympathetic feelings of the baby are aroused, the more lasting will be the impressions it receives. See, it begins to stretch its hands, to listen to the words and tunes, following the motion of the ball, proving that it has learned to connect facts with ideas. Recognizing in the ball, furthermore, the nucleus of all rounded forms in nature, I have

arranged a series of ball-like forms to be placed successively in the hands of the baby, to direct the perceptive faculties to the existing similarities and dissimilarities, giving the child the necessary opportunity for a playful and joyful self-education by occupation with the following objects: 1. A number of solid balls, differing in color, size, and material, of which not one should be smaller than the baby's mouth. (Patented Color Ball Play, by E. Marwedel.) 2. A number of solid balls divided into zones, differing in color, size, and material, to be rolled and laid in figures. 3. A number of solid balls, divided into rings, differing in color, size, and material, to be strung on a cord, and laid in figures, awakening the sense of order and beauty. These rings should be so arranged on a long string, which the child, or those who play with the child, can join or separate. (Patented by E. Marwedel.) 4. A number of ball-like forms, as found in nature, consisting of apples, peaches, pears, flowers, and vegetables, made of rubber, porcelain, papier-maché, or any other appropriate material, to serve the child's amusement and self-occupation, developing its faculties of perception and comparison. This should be aided playfully by the adults, without depriving the child of gaining *for himself* independently a knowledge of cause and effect,—an educational point of great importance, even at so early an age.

VI. FROEBEL'S MOTHER AND COOING SONGS.

In man, immediately after birth, we perceive much less extensive powers associated with co-ordinate movements of the muscles than in animals. On account of their greater multiplicity in man, they need a longer period of gradual, in an educational sense methodical development; making clear the impossibility of perfecting such a complicated and associated mechanism before birth. The capacities of man lie dormant, depending upon his experience and a stimulant from without to make him aware of what he is able to *be* and to *do*. The human child has to learn. Changing but in form, the excellence of animal instincts lessens in the same degree as general intellectual capacity broadens, as is observed in the savage and the domesticated animal. The former loses the keenness of his instinctive powers under the shelter of civilization, in the same proportion as he gains the capacity of acquiring general culture.

While the child of civilized races progresses slowly in its mental and physical growth before completing its maturity, it has to undergo many changes of habits and thoughts of life.

Owing to the flexibility of his limbs, any impression on the still growing man remains, influencing the whole organism with an everlasting stamp from the very earliest period of life. The human tendency to form habits by participating in and imitating the actions of others,

must be considered the prime mover in the evolutionary, physical, moral, and intellectual development of the child. They do not consist in positively acting forces, example and surroundings being sufficient; and in this sense is to be understood Froebel's demand to compare the child with the plant, and its slow, gradual development, — to be placed in a child's garden.

In this child's garden, Froebel says to the child: "Grow! grow in full harmony with thyself and thy surroundings. Grow with all the vigor of which thy nature is capable. Grow to be thy full self, and nothing else than thyself. Make thyself, morally, intellectually, and physically."

To whom did Froebel intrust the care of this growth? To whom did he look forward to prepare and fertilize the ground? It was the mother! His heart was with the mother, in whom he recognized the sole motor of all higher principles and devotional virtues. His words are no more heard, but the most eloquent interpreter of his thoughts and aims lingers still among us with that tenacity of will which helps eminent minds in the frailest bodies.

A clear knowledge concerning the bodily care and development of the human mind in the child is found only in specially cultivated mothers, while, without even a conception of its need, an instinctive love and traditional fancy are thought sufficient.

Froebel attempts to furnish the mother with the knowl-

edge to which she is entitled by the laws of God and her nature, predicting enthusiastically that "the mother," once becoming conscious of her duties, will lead in the highest of all sciences, namely, "that of man."

Froebel's nursery songs, consisting of a series of poems, point first to the feeling of the mother herself beholding her infant. They may be called imperfect as poems, even in the original German, the words not being equal to the superiority of the ideas, — a fact necessarily affecting the American translation. But in both cases only their outer form is injured. Froebel requests the mother to receive the child as a special gift of God in religious devotion as a new, valuable light to human society; as a new germ of a responsible human mind, to be recognized from its first hour in its higher rights of the soul, to bestow equal share of spiritual influence on her newborn immortal child, as she offers physical care to its body.

Most young mothers play with their children as with their dolls. Any childish remark serves as amusement, ignoring any connection with education. Froebel says it is impossible to correct in the second year the wrongdoings of the first year, thereby heaping the shortcomings of one year on those of the next. Mothers will say, "As soon as my child understands what I say, I give my commands and forbiddings, teaching it to control its will and to do right." What a mistake! When the child understands these words, the most important time has been

lost. If good habits and inclinations, obedience, order, cleanliness, kindness, and other virtues have not been rooted in the first year, it will be most difficult to uproot bad habits and to implant new ones. Froebel attempts to convince mothers that the highest self-sacrificing love, without the knowledge of these shortcomings, may lead the child to crimes and sin.

Science demonstrates that almost with life itself the child discriminates between pleasure and the opposite. The nursery songs are intended to awaken the higher emotional feelings which grow from the sensational impressions the child experiences from its surroundings. Numberless children remain dull, indifferent, and mentally asleep, because no one arouses their sympathy and emotional feelings. Therefore, no elderly nurse, who is unable to play with the child, nor any untrained and uncultivated young girl, who is often rough and silly, should have the care of its mind and body. Nurses should be trained in *schools for nurses*, according to Froebel's principles.

The first natural relation of the child is with its mother. Nothing develops this higher union more strongly than motherly bodily and mental care. "It is too stupid!" said a mother who only took her child occasionally from the arms of the nurse.

It is no less important *how* the baby is placed in the cradle at night, and *who* puts it to sleep. A sweet, short prayer by the mother, a soft, melodious morn-



ing song before the child leaves the cradle, will affect a child in opposition to the thoughtless harshness of the business spirit of the day.

The first vague impressions made on the senses of the child are perceived little by little. By many repetitions they are transmitted into a conception, from which and by which it gains at last an individual emotional feeling.

This early visible process explains the most wonderful and mysterious relation between mother and child, and it is a great error to believe that the bodily development of the child demands an undisturbed monotony of its mental condition. On the contrary, no period of life connects body and mind more closely than the earliest one. Therefore, physical and mental exercise have to keep equal steps; plenty of food, plenty of sleep, with much-considered simple excitement. The nursery songs offer this by muscular exercises, through play of the limbs, united with mental nourishment by tunes awakening emotional feelings. The activities of life and joy thus awakened improve health; even the digestive functions developing that power of resistance in sickness so often missed, the absence of which becomes fatal in fat, lifeless babies.

Activity is predestined for man. He is born with certain organs to support his free creative powers for labor. The first development of these organs is the prerequisite of the following activities, reached by muscular exercises, a truth manifested by nature through the con-

stant movements of the hands and feet of the child, accompanied by its pleasure. To facilitate this natural desire, a mattress has been lately invented, giving the child free scope of exercises; likewise a softly lined basket, by a physician, which promotes free position and motion, and in which the child is to be carried by hand, thus preventing carrying on the arms, and in the brain-shaking carriages. Gymnastic exercises are no longer questioned as to the quickening of the circulation of blood, and they have still higher value in the case of the body. Besides, by the early use of the limbs the child gains that independence of will which, by free activity, develops energy toward certain aims necessary to form "force of character," without which no higher moral power exists.

The moral development at such early period of life depends entirely on impressions made on the senses, the most important being that of touch. The simple movement of kicking may be turned into a measured gymnastic exercise, accompanied by song imitating the stamping of horses' feet, or the clattering of wheels in a mill. The influence of music has been tried successfully on babies not older than two months. With the introduction of the kindergarten, the finger plays concerning the family circle are spread almost around the globe, but they should not be less "a mother's song." It was a charming idea of Froebel to point to the family and the loving relation of each to the other,

A great part of Froebel's exercises are for the earliest development of the hand as the most important organ of human labor, and as furnishing the best means for a gradual growth of the brain, which develops very slowly into its normal condition. Furthermore, as all human development starts from the labor of the hand for human comfort and art, it is evident that manual ability must not be neglected at the earliest part of life to prepare the skillful and trained hand, so important to the laboring classes.

The difference between children under different mental and physical treatment has proved clearly how much is neglected. Good or bad habits instilled in the first year of the life of a child will last forever. Little children still carried in the arms of the mothers have shown themselves very unhappy if their clothes were not placed and folded "just right." This may seem to be an insignificant matter in education, but it is not.

The baby's attention must be directed to the right actions of its older sister and brother; let simple impressions be repeated, supplementing and strengthening them by the expression of your features, giving approval and animating language to all good deeds of the young mind. The recognition of gestures and manners, a kind or unkind face, is astonishingly great and well defined in babies, and it has been known that very young children copied *all the peculiarities of their nurses.*

Moral education depends mostly on the efforts to overcome innate egotism with the care and love for others. Far from destroying the self-will, without which no self-esteem exists, it is necessary to counteract in the first months that selfishness which leaves no place for others. It is very true, a child can express only its *own needs*, as it feels only for itself. It knows nothing outside of itself, but the pleasure to acquire what suits or pleases its senses. This is shown in its continued graspings after anything in its reach. This must not be identified with selfishness. It is absolutely necessary to develop its self-will. Before man *has* anything he can call his own, he can neither be active nor use his influence over others. He can hardly show his love by tokens and actions. As soon as a child is able to reach what it desires, and hold it, it should be led to return it or to give it to its sister or brother; in short, every possibility should be used educationally to diminish selfishness. To this end, give the child very early opportunity to fulfil certain obligations.

Froebel's finger plays and songs serve, however, to further this end. The child, small as it may be, is sure of the use of its hands for itself and for others. It takes care of the ground, of plants and a garden. Froebel demands flower-pots for every nursery. The mother, in watering the flowers, he says, with the baby in her arms, allowing it to place its little hand on the watering-pot, singing afterward a song from the nursery book, forming

the watering-pot with the fingers and flowers and buds, and the older children representing the gate of the garden, does a great deal, and even the smallest child should be allowed to have the care of one or more pet animals, the feeding being always a great delight to small children.

The close relation to nature, of which the child is unconscious, is demonstrated by the great affection the child shows for animals. This affection, used and cultivated, has to be turned into love and kindness to its own kind. Shape, color, motion, in short, all characteristics of different material, the child will learn to understand by the comparison of animal and plant life, as shown in the Froebel nursery songs, "The Barn-Yard" and "The Garden Gate." The peculiar sounds of different animals, so easily and joyfully imitated by the small child, should be used in its first attempts to speak. "Bow-wow" of the dog, "moo-moo" of the cow, the croak of the frog, the crow of the rooster, blend or present a number of sounds of foreign languages.

Even the highest of all feelings — the religious feeling — can be united with the first observation of nature — the works of God. Froebel arranged the finger play, "the bird's nest," for this purpose. It symbolizes the provision for those God created; the care of the bird parents indicating the care and love of God for all, man and animals. Without the actual making of the nest, with its little fingers, the child would have no conception of the

abstract meaning. Not the words, but the visible impressions of the birds' nests, the tune of the music, the enlightened face, the compassionate delicacy of the mother's voice, work educationally in elevating the small child. Nothing leads the child nearer to God than the visible impressions of creation on the senses,—a reason why children should be for the first months as much as possible in the open air, placed under the influences of the beauty and harmony of nature. A baby awakening in the fresh air, amidst trees, lawns, and birds and beautifully colored flowers (like the eminent botanist, Linnæus), will be very differently developed from another brought up in-doors, not leaving silent, gloomy rooms, where there could be no emotional impressions on the senses.

The Mother's Nursery and Cooing Songs provide: 1. For the gymnastic of the limbs; 2. For the recognition of the beauty and usefulness of nature; 3. For family and social relations, by exercises of the hand, finger, leg, foot, and senses, supplemented by songs and music, and should be in the hands of each mother.

How much merit of Froebel's originality we may feel obliged to assign to educational reformers previous to him, we have to confess that no one wove a similar filigree net-work of tunes, silvery threads of love, and childish plays to suit and fit our babies in the cradle. The tender little hand, with its still more tender fingers, he uses as the symbol of family unity. Not a

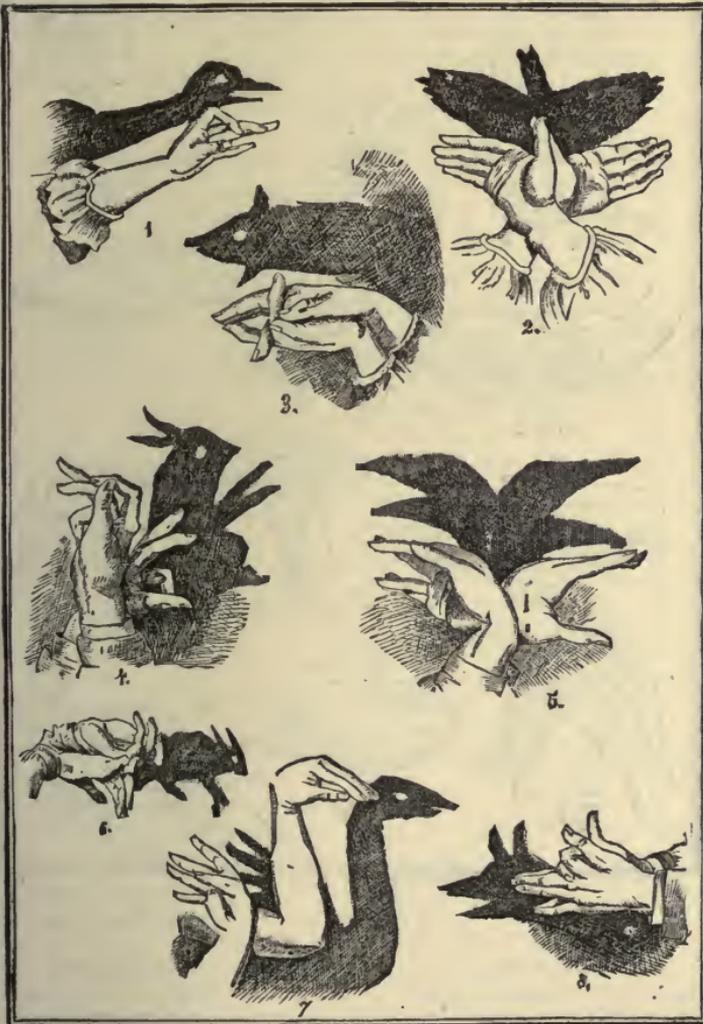
single member of the whole, great or small, does he leave out. Family unity—the nucleus of earth's happiness and earth's goodness—as a part of the large brotherhood, he sings and plays into the awakened soul of the baby. Love and tenderness are the educational atmosphere in which he wants the young child to be continually nourished and trained.

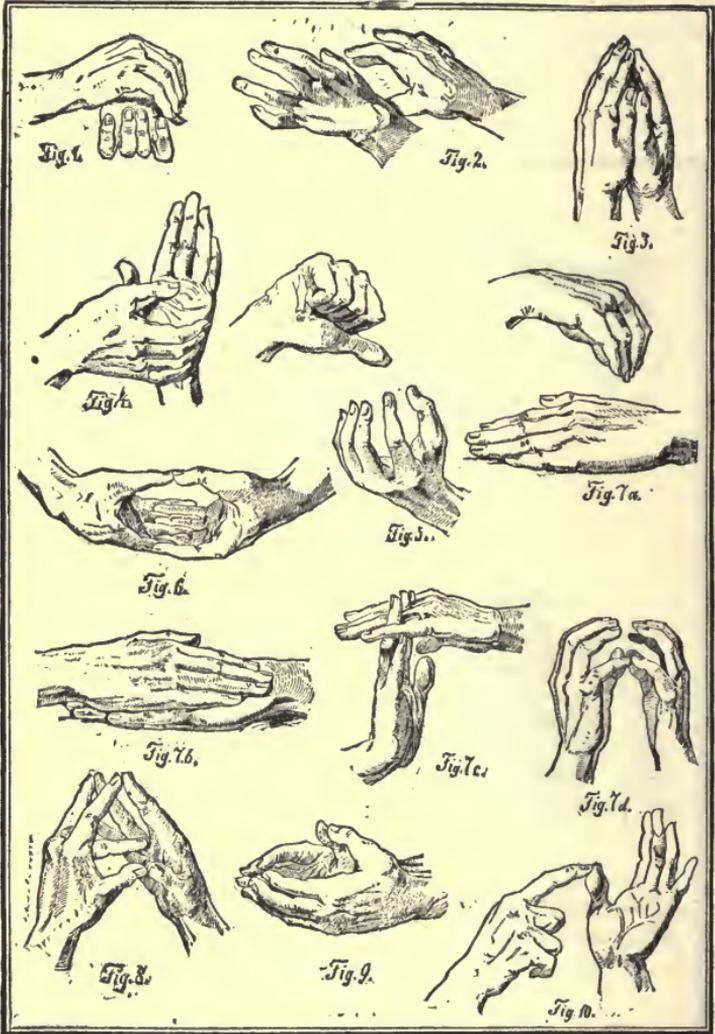
The following present a few specimens:—

TO A CHILD.

O child! O new-born denizen
 Of life's great city, on thy head
 The glory of the morn is shed
 Like a celestial benison!
 Here at the portal thou dost stand,
 And with thy little hand
 Thou openest the mysterious gate
 Into the future's undiscovered land.

Longfellow.





Nos. 1, 2, 3, 4. Pigeon-House.

1. *The Pigeon-House.* — 2. *Their Flight.*
— 3. *The Shutting of the House.* — 4.
The Opening.

We open now the pigeon-house,
And set all the happy flutterers free.
They fly over the fields and grassy plains,
Enjoying their sport and liberty;
And when they return from their happy
flight,
We shut up the house, and bid them good
night, good night.
Coo-roo, coo-roo, coo-roo.

No. 5. The Gardener.

In flowers so much a child can find, —
The colors, sweet and tender, of any kind;
The form, sprayed, round, or bell-like,
large or frail;
Spored like a spider, curved like a snail;
Grouped like umbrellas, — spikes, disks,
or wheels, —
And will find all the names in its natural
zeal. L.

No. 6. The Basket.

We the slender twigs are taking,
And nice little baskets making.
From the lovely rosy bowers,
We will fill it with sweet flowers.
La-la, la-la, la, la, la!
Give it to papa.

Nos. 7a, 7b, 7c, 7d. The Little Gardener.

7a. *Imitates the Sowing of Seeds.* — 7b.
Its Protection against Wind and Cold.
— 7c. *The Support of the Plant.* — 7d.
Presents the Formation of the Flower.
Open wide the garden gate, —
All the plants need tending.
Water from the well we're holding, —
Soon will help the buds unfolding.
Each encloses its little head,
Greeting us with spicy smell.

No. 8. The Farm-yard Gate.

What can that be? A gate I see.
Oh, come into the court with me!
The horses are springing;
The pigeons are flying;
The geese are chattering;
The ducks are quacking;
The hens are cackling;
The cock is crowing;
The cow is lowing;
The calf is sporting;
The lamb is baaing;
The sheep is bleating;
The pig is grunting.
Closely shut the gate must be,
That no one can run away,
But all in peace together stay.

A. G.

No. 9. The Birds' Nest.

Two pretty birds built a soft, warm nest,
In which together they might rest.
Three round eggs in the nest they lay,
Hatching three little birds one day.
Twit, twit, twit, the little ones call, —
Mother, you are so dear to us all. A. G.

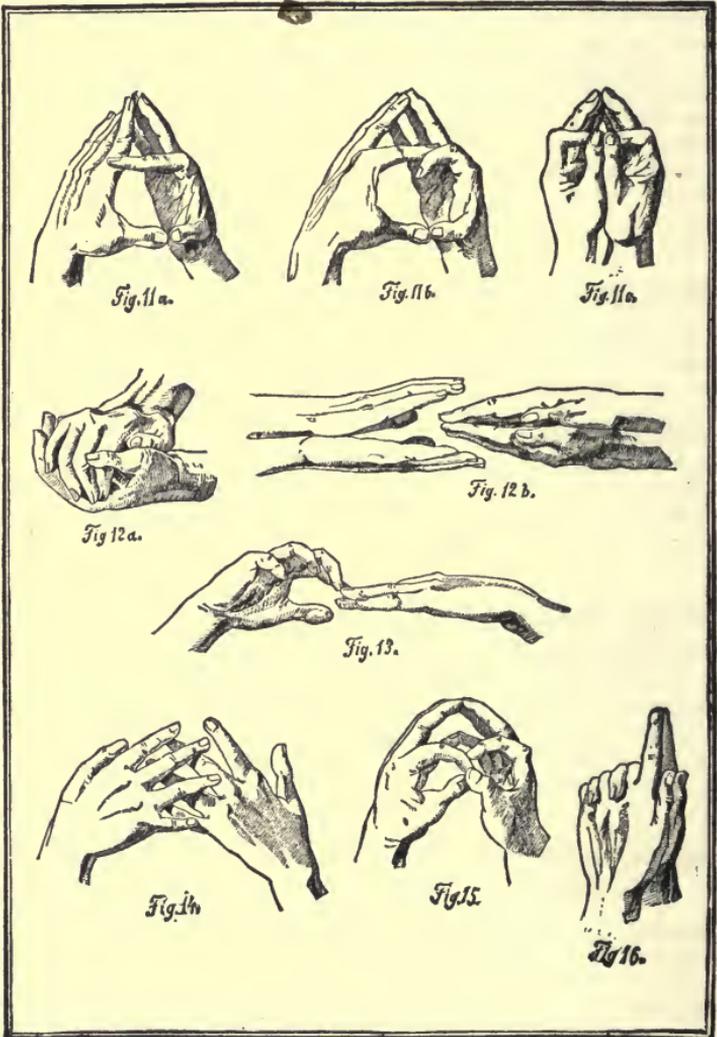
No. 10. The Family.

This is our mother, dear and good;
This is our father of merry mood;
This is the big brother, so strong and tall;
This is our dear sister, beloved of all;
This is the baby, slender and small, —
And this the whole family we call.
Count them, — one, two, three, four, five.
To be happy and good they always strive.

A. G.

Nos. 11a, 11b, 11c. The Carpenter.

*Nos. 11a and 11b are intended to illustrate
the Cutting and Sawing the Tree into
Beams, while 11c indicates the House,
with its Gable, Window, and Door.*
The carpenter, and all his art,
We ought to honor and revere.
Look closely, then, at every part
Of all his clever doings here;



For if he had not built this place where
 mamma is,
 Where would dear baby spend her kiss?
 L.

Nos. 12a, 12b. Pat a Cake.

12a. *Patting the Cake.*—12b. *Putting it
 in the Oven.*

Baby wants to try and make us
 Such a cake as he can bake us.
 Pat your cake, — I'll show you how, —
 Baker says, It 's quite time now. L.

No. 13. The Fingers Dear.

To thumb I now say one;
 To index finger, two;
 To middle finger, three;
 To ring finger, four;
 A little finger five I number.
 Now I put them all to bed,
 Pillowed on their sleepy head, —
 Let them rest in peace and slumber.
 A. G.

No. 14. The Window.

Look, baby, through the window bright, —
 It gives you warmth, it gives you light.
 A shining plate when clean and clear,
 Like baby's eyes, so sweet and dear.

No. 15. The Church Window.

The Heavenly Father's glorious sun
 Shines through the window, and makes
 it bright.
 He shines on thee and every one, —
 Look up, and thank Him for His light.

**No. 16. Finger Exercises of
 Different Kinds.**

Wouldst thou give thy child of outward
 things a notion?
 Let it early learn to imitate their motions.
 Thus in these things deeply ground it.
 It will learn
 To discern
 And to copy things around it. A. G.

It must here be repeated that the motions, though developing skill and elasticity of the hand, are, including the words, a mere skeleton for the mother to enliven with thoughts and moral directions, and that these feeble attempts will lead every mother and kindergartener to inspire herself through the original "Froebel's Mothers' and Nursery Songs."

CHAPTER VII.

THE CHILD'S INDIVIDUAL ACTIVITY DEVELOPING REASONING FACULTIES, WITHOUT THE USE OF LANGUAGE.

- I. The Development of the Faculty of Reasoning through Sympathetic Emotions, supplemented by Dr. Seguin's Opinion. — II. Early Educational Influence on the Power of Reason, leading to Conclusion and Judgment. — III. Influence on Reason by early Contact with Nature.

I. THE DEVELOPMENT OF THE FACULTY OF REASONING THROUGH SYMPATHETIC EMOTIONS, SUPPLEMENTED BY DR. SEGUIN'S OPINION.

SIR JOHN LUBBOCK, in his "Origin of Civilization," asks: "How is it that intellectual inertness, amounting almost to stupidity, is frequently the concomitant of an acute and persistent sense training?" We refer to the fact that while sensuous emotions are necessary to develop the power of imagination, according to Prof. Wundt's "Essays on Psychology," no talent or genius can be developed without a close unity of emotions with the faculty of reason, which is so clearly demonstrated by the idiots. We refer every thoughtful educator, who desires to learn the due importance of this pedagogical problem, to Dr. Seguin's valuable statement: "Unfortunately, it is and will remain for some time popular to

extol and excite what is called the intelligence of infants. But if an infant were allowed to grow by his physiological and only safe growth, it would be seen that cerebral activity does not play the conspicuous part we attribute to it, and that what we mistake for *judgment*, is really the child's *sympathies*; that we cannot, without peril, fill his brain with impressions which *may*, or may *not*, in after years become the elements of mental operations; and that unless such impressions are directed by the sympathetic organs, they have no effect on the doings of childhood, and almost none on those of later life; and this because of reasons, two of which will suffice.

"(a.) At this age, external impressions may be reflected on the cerebral convolutions, and on the sympathetic central ganglia, as images of objects are reflected on surfaces sensitive to light, but there is this difference: that when the impressions on the gray matter of the cerebral convolutions have become mixed or defaced, they leave no trace; but when the impressions have vanished from the sympathetic central ganglia, they yet leave behind such indelible determinations as will overrule the intellectual teaching.

"(b.) Another difference is in the entrance of the perceptions into the cerebrum of the *sympathetic ganglia*. If the object to be perceived is directed toward its reflected centers, the effort of thinking is almost always too great for the object, and, greyhound-like,

it overleaps what we wish it to grasp; or, if it comprehends aright, it is by a concentration of synergy, for which an abnormal amount of blood is accumulated in the encephalon; the congestion is announced by the color and swelling of the blood-vessels, and the effort, by a rise of the surface thermometer at the temples. If, on the contrary, the objects presented for perception had been directed *toward the affective nerve center*, their impressions are more sure, and do not predispose, like the former, to infantile hemiplegia or meningitis. The child feels them like a sensation about the diaphragm, during which the respiration may be somewhat momentarily suspended by the motion, then become deeper, with a quicker beat of the heart, and a blood current of inexpressible happiness.

“Who has not retained at least a vague remembrance of a child’s feelings when permitted to enjoy himself without admixture of forcing reasons on the emotions produced by new contacts, new movements, new colors, new sounds, new voices, new associations, new scenery, new people; for instance, the features of a new baby in the family, — all things which, touching us to the quick, touch us forever? But how few children are allowed the ineffable delicacy of this education through the sympathies! Some are given up to pedantic mentors; some crushed by home tyranny; some nursed with depressing mythologies; some anæsthetized of noble feelings by debasing wants; most are rebuked for their silly eagerness to

know things which they can find out for themselves as soon as they have mastered the twenty-six symbols, which are supposed to contain all knowledge, and therefore *are hurried to the book*. And how few remain,—stray babies on the laps of placid mothers,—allowed to feel their own surroundings, and to come out from this emotional baptism, poets, painters, *savants*, interpreters in their own language of Mother Nature! Agassiz began one of his most renowned courses by begging each of his pupils to come to the opening lesson with a grasshopper in his hand. Why could we not begin lower with infants by encouraging them to come to us in the nursery, kindergarten, and schools (which I always encourage them to do) with the things in their hands which please best? When the child is yet attached to the breast of the mother, everything coming to his senses, especially to his touch by contact with her, is intuitively known and felt through sympathy, without the slightest interference of the mind.

“When this view shall have received the attention of true mothers and teachers, they will alter their curriculum in this wise: will cease exclusively to cultivate the upper portion of the nervous system, and will bestow a proportionate attention to the wants of the more central ganglia, and train the functions of the whole system in view of their correlations and concordance. Then will cease to rule, rage and ruin, the inner dualism. Then teachers will be able to return service for service to

physiologists by demonstrating that the cause of the increase of insanity, indeed of almost all the insanities, is the discordance, nay, the antagonism, raised by education, custom, and creeds, between the cephalic and the central parts of the nervous circuit; that the functions disorganized at first are curable at once, but that the organs subsequently altered by *accoutumance* or shock are rendered incurable. This we predict, and support on the evidence that, in true savage life, where the whole nervous system is evenly let alone to the drifts of instincts, *insanity is unknown*; but where the strain on the mind is excessive, and the sympathetic wants ignored or subdued, insanity is rife."

II. EARLY EDUCATIONAL INFLUENCE ON THE POWER OF REASON, LEADING TO CONCLUSION AND JUDGMENT.

If the intention of the writer to awaken conscious motherhood could have led to exaggeration, the foregoing suggestions, supplemented by Prof. Dalie at the Salpêtrière at Paris, and other scientists, would justify them. They reveal but truth, which any thoughtful observation on children verifies, and which any mother could live up to understandingly.

Preyer's sixteenth chapter, on the development of childish reasoning independent of the knowledge of speech, offers many valuable hints. Comfort and discomfort in their extremes, "pleasure" and "pain," include the

whole scale of feelings in the child, according to the observations of Preyer; these feelings are not so varied as in an adult, on account of the incompleted activity of the senses, though they may be more intense.

The unconscious sensation of joy which the child instinctively demands, Preyer states, if not granted, creates his discomfort.

The sensation of *wet*, of sweet odors, experienced by the child through contact with milk, leads it either to a comfortable or uncomfortable feeling, which repeated in space and time grows into a clear conception; which later perceived by the conscious act of connecting *two* sensations with an idea becomes the starting-point of reason, from which, like a circle around a circle, the powers to perceive *in*, to connect *with*, and to abstract *from* radiate into conclusion and judgment. This process serves a twofold end, namely, to widen, and by repetition to deepen the power of reason and judgment. To regulate and to strengthen these powers at the outset is the educational demand. As in the assimilation of nutrition by the body, the amount and the combination of impressions to be assimilated by the mental and spiritual powers of the child must be considered; as the food assimilates itself with the physical growth of the child, no mental and spiritual growth can be expected before the act of assimilation is accomplished.

In the same degree as unnatural food injures the stomach of the small child, so unnatural mental food

will injure the mind of the young child. The importance of this fact has been repeatedly discussed in this book, but it can never be repeated too often. W. Preyer points to the simple means with which his child accomplishes its self-education, by observing causes and effects. His child experimented with a glove, with the hair of his mother, the stove, the demijohn, by grasping after the smoke of his father's cigar, by opening and closing his ear to test differences of sounds, by striking his spoon on his hand, on his plate, or tearing the newspaper.

It was not the name, but the nature of the thing which occupied the mind of the child. This inborn tendency seems to explain the possibility of the child's capacity to think without words, by connecting the sensations received directly in pictures before the mind. Galton refers to the human power to think, as it were, by means of a second thought, which arises without an act of the will, creating before the mind certain forms or mind-pictures which represent numbers or objects. Whatever this process may be, no one denies that the child develops its mental capacities exclusively on concrete impressions, which become assimilated with its fundamental or innate disposition (individuality).

Here we may say lies coiled up man's apperception in the embryo. If the child in this first period of its life be surrounded by the gloomy and chilly dampness of a cellar, or the balmy brightness and sunshine of a country home among trees and flowers, by sadly depressed or

happy laughing faces, its innate propensities are affected, and directed for good or for ill. We say propensities, that is, spiritual powers whose want of exercise may prevent the common farmer from perceiving the beauty of his surroundings, while their exercise makes the simple-hearted and simple-living Swiss die when deprived of his Alps.

What a responsibility, then, for mothers and parents at this period of development, in which full freedom for an individual unfoldment and a wise direction of will and reason coincide! And here we refer once more to the idea of an educational atmosphere which provides such means as will foster a harmonious development of the senses, the will, the reason, and the higher emotions, and consist chiefly of good example, and the banishment of all bad examples. Preyer's observations on his child show us that he reasoned on the sympathies of his father. He found on doing certain actions that he met with a certain treatment, and so he affected such situations when the cause for them did not exist; as, for instance, when he wanted "to leave the room." We perceive the steady control of will by the child's not attempting to walk until certain he would not fall. Mr. Lindner states that while his little girl, twenty-six weeks old, was lying on her back, taking milk, the bottle slipped sideways so that she could not drink. To remedy this, she used her feet to lift it sufficiently high to get her food, and so succeeded. At twelve months old Preyer's boy grasped

the flame of a candle, and burned himself. He could never be induced to put his finger in the flame again. This happened at the same age with the boy of Mr. Darwin.

At eighteen months Preyer's child had ceased to throw his toys on the floor, because he had been repeatedly told *not* to do so. He showed comical respect toward good habits and the educational impressions he had received, by his excited disgust when he saw his nurse eat with her knife, etc.

This proves the possibility and necessity of the early direction of will and reason. The child of Prof. Preyer was evidently born with unusual powers of causality as well of self-respect, caution, and imitation, as shown by his desire to have a trail like his mother's; but it does not appear that his sense of propriety could be compared with that of the child who remembered the loss of one of his animals or ninepins when only eighteen months old.

Though of late many have studied and written on the earliest development of the child, as, for instance, Kussmaul, Genzmer, Sigismund, Golz, Lindner, Mrs. Friedman, Mrs. von Strämpel, and Barønness von Taube *née* Countess Keyserling, Darwin, Bain, Taine, Perez, and finally the Russian Dr. Sikorski and the valuable American writer, E. Seguin,¹ no work can be compared

¹ Where are our intelligent, inspired, and capable female doctors of America?

with W. Preyer's as regards its extent, exactness, and scientific profundity, connecting a psycho-physiological development of the child with pedagogical conclusions. Coinciding in opinions with Preyer, Fried. Froebel demands "*self-development*" through *free individual activities* for the child in the cradle; and he presents the world with his priceless gems on education, found in his ball plays and kindergarten occupations, mother and nursery songs. These enable the mother to sing and play the most natural human unfoldment into the mind of the child, not by a series of arbitrary actions, but by an educational atmosphere for a free individual growth, for which she has to be prepared.

As emphasizing the extent to which modern educational thought has taken its tone from the note sounded by Froebel, we quote the following out of an essay by Dr. Gustav Wittmer, of Cassel,¹ published in a recent German magazine:—

"As regards the forming of character, every school, of course, believes itself performing its whole duty in that direction. How does one, after all, build character? and can it be built by theory, by words, in the schools of to-day? Under a rational bringing up, character unfolds quite of itself, while constantly habituated to the good and the true, within the boundaries of a strictly legitimate sphere of activity, adapted to the individual advancement.

¹ Editor of Die Erziehung der Gegenwart.

This rational bringing up, this habituation, logically begins, however, with the very birth of the child; indeed, the very earliest years of life, those before the school age, are in this aspect the most important, because in these years the greatest changes take place in the physical brain.

"Pedagogics which leaves these years out of the account, does not deserve to be called rational or scientific,—it is built upon the sand. The objection will, perhaps, be made here, that the earliest years cannot be treated methodically, or that, if so, the treatment will be unnatural; that one must leave the reins to nature. In answer to the first objection, I admit that, in the hands of a man, such treatment would be impossible; but in the hands of a woman, not only not impossible, but very easily practicable. It follows that, in respect to educational pedagogics, both sexes go hand in hand. It may be regarded as established *a priori* that the being who brings the child into the world possesses also by necessity the disposition and the capacity to guide the child in the world, and to direct its life in a suitable manner; that is, in a manner not merely instinctive.

"Not that under favorable circumstances, and by the merest instinct, good results have not been attained, and many a mother has been and is an excellent educator, without any special previous preparation; but these are exceptions. In this article we are dealing with a principle, and speaking from a scientific stand-point. It would

be barbarous to aim to guide ourselves in a spiritual department by the natural instinct which we perceive in the lower animals; we need also an art of rearing. Man will never go forward so confidently under the leadership of instinct as do the lower animals, for his self-determination is freer, and in individual cases he is far more likely to be subjected to error than is the animal. And why should we fall back upon instinct, when much more is to be attained by care and intelligence?

“As a being endowed with intelligence and reason, a woman has the same right as a man to be placed above the measure of the merely instinctive. Surely, in no other department in life do we let the purely instinctive control us. We neither till the soil, nor paint, nor cultivate music instinctively; nor do we attend in the same way to commerce or industry. Even war counts as an art. And shall the development of a child, the greatest art of all, be left to the guidance of the instinct? We should by that means pronounce woman mentally inferior in a way as baseless as it would be unworthy. And here, at the same time, we meet the second objection, viz., that it would be unnatural to subject the earliest years of life to a methodical treatment. - Although the mental and moral capacities of the child may be only potentially in existence (in the germ), still they are there, and demand activity.

“Does any one really believe that nature flings aimlessly away the precious years of infancy, up to the time

the child may enter school? Is the child during these years only a toy, a doll for the mother and other fond relations, an object of silly and purposeless play? Nay, the child very early longs for the exercise of its powers, and, as a rule, no one knows how to provide this exercise. It is this misunderstood urgency of the child to be occupied, to use his faculties, which brings so many inexperienced mothers into despair, because they do not know how to satisfy it. The child does not wish to be aimlessly entertained; his whole being consists in touching, hearing, and seeing, — he sucks in the impressions which surround him. Now, every one should understand that the child, earnestly wrestling for the exercise of his bodily and mental powers, may be entertained according to some purpose and plan, and at the same time not subject him to any undue exertion. On the contrary, the child has the more joy and profit, instead of a wild chaos of objects, forms, colors, and tones, with which he is surrounded by his parents. All these things may as well be given him in orderly sequence. The chaos out of which the human soul must struggle upward is not then the result of a law of nature, but because we have hitherto not understood how to make the struggle easier for these young souls. Let no one believe, however, that it is a matter of indifference what soil of earliest environment the child grows up amidst. Whatever was around him then, whatever he lived through at that time, has a determining influence far into the maturer years

of his life, often through his whole life. The foundation-stones of human life are fixed in these years, even if the complete superstructure is only possible when the noise of the world begins around him.

"And now we must return to the question whether the school does in reality teach 'for life'; and this time we ask the question with especial reference to the girls' school. What, in sober earnest, is the destiny allotted to girls in this life?

"However various the careers now open to women, it may still be accepted as true that the large majority of them are destined to become housekeepers and instructors, either in their own homes or in larger circles. No one doubts this. Their culture, then, should correspond to this exception. On the one hand, this culture cannot be too practical; on the other, it cannot be too theoretical. For the above-named vocation places the woman in a curriculum of labors and duties whose fulfillment is only possible to a many-sided mental and spiritual culture. The question whether the woman should be educated for a domestic life alone, or for other and higher aims, is quite superfluous; she must be educated for *both*, for the highest aims which a woman can have are to be found in her home. As house-mother, she must have practical knowledge; as instructor, she must be initiated into the highest questions which affect humanity, whether these questions concern science and art, or politics and sociology. She must learn psychol-

ogy, pedagogics, hygiene, singing, drawing, *belles-lettres*, etc. She must at least know the meaning of, and be able to find her way in, all these departments of human knowledge. For in the guidance of children, all these subjects come in for their share of attention.

“And now let us ask again, does the school, especially the finishing school for young women, correspond to the requirements? It is very difficult to refrain from satire at this point. Dilettanteism, superficial and purposeless smatterings of many studies, are the principal fruits of these institutions. They give too little for science and too much for mere living, and must carry in their shallowness the seeds of their own destruction. We need, instead of these, institutions that will give women a solid, genuine education, fully covering the demands of their vocations, and which shall indeed provide the very highest scientific training for those women who are capable of receiving it, and whose natural endowments fit them for special careers.

“By this means we shall find the simplest solution of the much-discussed woman question, and shall lay at the same time a firm and sure foundation for pedagogics. But there is no longer any question as to the way in which is to be developed the pedagogic activity of woman. That way has been clearly and certainly marked out by Pestalozzi, and most especially by Friedrich Froebel. Mothers have this science in their hands, and have also the first steps of its application. The

grand significance of Froebel's method, when regarded as a means for character building, consists in the fact that it is fashioned upon the model already given by nature, which recognizes the human being as not merely a rational being, but as a *creative* being.

Character can be rightly built only by the early direction of this childish creative energy into the right paths; and this method finds little or no recognition in the schools of to-day. It is the duty of the state to place this matter of human rearing on the high plane proper to it. It has less right to leave to private effort this matter, which so deeply concerns future generations, than it has to leave to the same effort the forest culture over which it now so vigilantly watches. What the forest garden is to the one, the kindergarten is to the other. It should be seen to that the kindergarten be attached as an organic member to the schools, and that the schools themselves be reorganized, so as to gain a unity with this addition of the kindergarten, and also that in the higher grades there is an increased subdivision, so that no mistake need be possible, either in the choice of the school, or in the vocation of the scholar.

"The kindergarten has still numerous enemies among us, and this discovery, so genuinely German as it is, is, like so many other German discoveries, only to find its full acceptance by us when it returns as a foreign development. But at least the fact that the years before the legal school age of children are the most important

years educationally, remains indisputable. It has been demonstrated by the most eminent scientists. And if one admits this, and still refuses to proceed on the Froebel principle, he is caught in the most glaring contradiction. If he does not admit this, and does know some better method for the guidance of early childhood, then let him come forward with his method! We challenge him to this in the name of rational pedagogics."

III. INFLUENCE ON REASON BY EARLY CONTACT WITH NATURE.

It has been our special aim to refer repeatedly to the influence of an early contact with nature by pointing to poets and artists, and the pennyless yet happy Swiss cow-boys on the Alps, who enjoy the beauty and language of their surroundings.

No student of man denies that a great part of man's restless desire for happiness is based on the want of something *outward*, which he has not *within*; on that feeling of emptiness which is due to the want of cultivated powers to assimilate a higher conception with our common phenomena of life, or to make objective abstraction on every-day things.

This lack of culture drives men mercilessly away from the simpler enjoyments of life. The point toward this end most neglected is that *love of nature*, which is not natural science so long as it makes classification its chief aim. Yet love of nature depends on *knowledge*

of nature, a comparative reasoning on all its coming and passing phenomena; the accumulation of an inexhaustible treasure, which never fails in a soothing religious effect, a direction of the thought at any moment to the overflowing source of comparative reasoning, which abolishes that *emptiness* which is so often the mother of vice and ruin.

(The transportable nursery of Emma Marwedel, with its forms of nature, will answer the needs of the small child in this respect.)

CHAPTER VIII.

THE GRADUAL STEPS OF LEARNING TO SPEAK, AND HOW TO USE SPEECH.

- I. Early Care of the Vocal Organs. — II. Cultivation of the Ear for good Language, including Alliteration and good Music. — III. Cultivation of the Mind for Exact and True Language. — IV. Cultivation of Independence for Original Language.

I. EARLY CARE OF THE VOCAL ORGANS.

IF the child's first efforts to speak were considered only from its physical stand-point, as explained by Preyer, they would not fail to awaken the interest, to excite the study of every mother and teacher in the land ; but how much more interest is offered when it includes the *use* of this superior gift ! Keeping in mind the great difference in human condition, comfort, and discomfort, we perceive in human language the means to express all that lies between these two extremes, and the existence of "joy and pain." Language paints man's thoughts, feelings, and aspirations in all their phases, being the truest representation of the Ego. Natural superiority in the power of expression and modulation of the voice reveals itself in melodious language, while harshness affects language in a like degree unpleasantly. Through all civilized ages, the culture of oratory has been regarded

as an accomplishment of man, and history has reverently honored those who possessed oratorical powers in the highest degree. The culture of the voice has become a special study. To whom is it applied? Is it used where it would have its greatest effect, even with the baby in the cradle? Is it taught by the mother? Is she as anxious that her girl should use her language with a full, melodious voice, as that she, if grown up, should wear a No. 2 or 3 shoe and No. 5 glove? Preyer contrived exercises introducing the utterance of sounds, including those of a foreign language. They may suggest such motherly thoughts and actions that my long-cherished plan will yet be attained, of cultivating in the way of play the elasticity and volume of the voice by means of a well-prepared table on which may be produced the fundamental sounds of all languages and the special sounds of each language. Let this be done, instead of teaching Mother Goose's rhymes,¹ the privileged destroyer and murderer of all natural connection of thought with its oral expression, which in many cases is the only mental food the small child gets.

¹ It is not so much the nonsense of the songs, but the manner in which they are recited to the child, which is harmful.

II. CULTIVATION OF THE EAR FOR GOOD LANGUAGE, INCLUDING ALLITERATION AND GOOD MUSIC.

The highly interesting observations which Prof. Preyer made on the development of his child's language, and its connection with the growth of its mental powers, must attract every mother, and lead her to similar action. The process he describes seems a slow one for an average child, for an American child an exceptionally slow one; but its extension makes it the more instructive. It shows the fatherly care for a *good* language, by directing the child's pronunciation carefully, and the development of its ear and reason by example. Germany so abounds in dialects that they are counted, not by kingdoms and dukedoms, but by counties and cities; so that it may be regarded as a very rare case that under the special care bestowed upon the writer and her sisters and brothers by her parents, in spite of the different dialects she heard spoken (having moved several times), her own language was kept free from any accent, — a great advantage in learning foreign languages. But while her French, which she learned quite young, could not be detected as that of a foreigner, she feels the lack of earliest training in English idioms. America has only one language, its slight diversities being hardly perceptible. It has no "patois" except the language of the negroes. The school language in its preciseness and compactness governs the whole.

And here lies its advantage, its danger. The French speak rapidly, but emphasize strongly, producing intervals. The Americans speak still more rapidly, and in short sentences, without emphasis, save a certain falling inflection at the end of the sentence. These are habits which, if moderated in time, will give the American nation, with its "born speakers," with their self-confidence, and ample opportunity for practice, a high rank in oratory. But home and school have to do their part understandingly.

Recognizing my own obligation as a teacher, I engaged, extra, the best elocutionist of the place to do justice to those tender beings trusted to my care. Fortunately, I found at least *one* teacher who understood how to impress the tender minds with the full influence of her art, and the effects gained proved lasting.

I have taken several opportunities to refer to the in-born power of the child for a symbolic poetical conception of things. Prof. Preyer's definition of the manner in which a child learns to speak makes this very clear. The child really thinks in *symbol*, or the reality of the idea or meaning for which we use words. Without dependence on the tone of the word, it lives and feels in the shades of tones, which stream out in rich melodies, giving each object its note in the accord of harmonies.

Rhyme and alliteration, a harmonious composition of shades of tones, fall naturally into the open mind of

the child, and even supply a natural craving of the child. Why do we call the first utterance of sound of the baby "cooing"? And why is it that even the harshest mind cannot resist the vague melodies which seem to descend from a strange world, reflecting the fullness and mystery of a new being, never existing before, bringing to light its inborn hieroglyphic, individual language, the very rhythm of its soul? Do we continue to nourish the child with such soul-language? Do we speak not only well to the child, but also in the best rhymes, constructed, too, in the form of alliteration? Their mathematical and ethical effect combined will bear rich fruit forever. But above all stand the melodies of the heart and soul of the mother. What her moral and mental lullabies sing into the being and living of her child will remain forever. Singing is the highest expression of man, and should be connected even with babyhood.

The Greeks made music a universal art, by which they educated their young. Their history was sung by their youths, while their illustrious fathers partook of their simple meals. Graceful movement plays, the crown of their Olympic games, were but symmetrically arranged musical gestures. It is the harmony, the soft rhythm of music, which should penetrate the character of man, to free him from the burning fever of excitement. But it has still another aim, and that is its physical, its hygienic effect. Singing, especially early singing, en-

larges the chest, improves the strength of the breathing organs, and develops a happy, joyful disposition. The home and kindergarten, when convinced of the necessity for better (why not classical?) music, can exercise a great directing power.¹

III. CULTIVATION OF THE MIND FOR EXACT AND TRUE LANGUAGE.

Prof. Preyer furnishes his readers with suggestions of great pedagogic value, by following the truth-seeking and truth-speaking disposition of his child. In an age like ours, in which "unreliableness" has almost grown into a proverb, such care has double value.

The writer refers in another place to her reason for a standard of measurement, chosen on account of its fitness to present the actual size of those objects connected with her circular sewing and drawing system, where she felt the strong necessity of leading the child to a *truthful* measurement by abolishing the existing vagueness between real and imagined sizes. The hurry with which we rush through our days, the desire to appear what we are not, the endless binding and never-ending and contradictory social phrases and obligations, produce effects which explain our deteriorating moral condition. Instead of keeping our children away from these, as it

¹ Think of Reincke's, Taubert's, Mendelssohn's, Mr. Daniel Batchelor's, Schumann's, and other composers' attention to children's needs.

is claimed, unavoidable social calamities, we bring them unflinchingly in full contact with those evils, saying that "they have to know it, anyhow." What wonder, then, that I was met one day by a *teacher*, who remarked, "All children are born liars." Why not say trained liars? Speaking, the act of furnishing an outward picture of the inner mind, is based on perception, memory, imagination, and reason. To assimilate these powers sufficiently to produce the *understanding* and *cultivation* of truth, is a long process. Preyer showed by facts that in spite of the lack of such abstract understanding, conscious obedience, truthfulness, and resistance to temptation were practiced by his boy in saying to himself, "Be brave."

This proves not only the natural inclination to righteousness, so much recognized in our kindergartens, but the power of an early direction without the use of language. This possibility has been otherwise most successfully demonstrated by the thoughtful conduct of a befriended family. The child was led to live *with* and *in* the sympathy of his parents. The withholding of this sympathy was used educationally. A simple shaking of the head, with an earnest expression, was at once recognized by the child in its directive meaning, and he respected it. And so well was the meaning understood that he began to use the same means, which, whenever possible, were most gracefully respected on the side of the parents. Why can we

not keep this natural condition between parent and child?

Because *we* destroy their faith *in us*, which reciprocally affects their faith in themselves. The child that comes to the kindergarten has often already lost its garment of purity and innocence; this garment has been torn from him in a thousand little pieces by the same authorities who, in after life, will blame him for what he is through their own fault. There is one great unavoidable danger: that is, as I have said already in other places, the contradiction between the real and the fanciful conception of things, while we consider both essential. It will remain forever a great educational stumbling-stone, especially when dealing with a child whose imaginative powers carry it so far that it becomes unable to decide what is real and what is not. The child may outgrow this period without ever becoming aware of the abyss on which it stood, and it is best it should do so. I remember two beautiful children of a very conscientious, thoughtful mother, who were taught to make a discrimination between a really true story and one not true. It is certain that nothing affects a child more lastingly than what the mother teaches by her own language. A pious, reverend mother will have the power to lift her darling up to the higher spiritual regions, while mothers of the restless spirit of this day, having no time for themselves, will hardly feel the moral and spiritual starvation under which they carry, from day

to day, to a moral destruction, man's highest gift,—a child!

IV. CULTIVATION OF INDEPENDENCE FOR ORIGINAL LANGUAGE.

While singing is recognized as man's highest power of expression, original language, reflecting creative human thoughts, stands still higher. As stated before, the desire to condense every thought into a nutshell, leaving very little chance for a broadening and modulation of expression, may become dangerous. No one can be opposed to a condensation of thought; but on the contrary, too much condensation seems dangerous in the daily intercourse of our homes. Monotony of expression and poverty of language detract materially from the freshness of our homes, while originality of language, like flint and steel, throws its sparks of light and life over the many weary and dreary hours which come to us. The strictness with which all that is not common in our everyday speech is excluded from familiar conversation produces a deadening effect upon a thousand smouldering fires, which need only *one* touch of inspiration to burst forth in everlasting flames, to warm, to lighten, and to brighten human existence. It should not be a crime to be odd. On the contrary, originality of language and originality in action should be fostered by the genius of the age in all lands.

CHAPTER IX.

DEVELOPMENT OF SELFHOOD.

I. Sacredness of the Body. — II. Spirituality in Selfhood.

I. SACREDNESS OF THE BODY.

No other nation is to be compared with the American in the care bestowed upon the body. Untouched by the remnants of religious fanaticism in which the idea of self-abnegation to God *forbade* cleanliness, the care of the body in America has become a *culte* of the body. Cleanliness and tidiness of the body and its outer garment, the habit of living, the way of carrying the body, equality between the position of the directing and submitting forces in this country, each and all show a clear perception of *self-respect*.

Self-respect has become an educator of *national virtues*. But in what manner? Is it wholly or mainly subordinated to improvement of the outer appearance? On the contrary, does not the use of the body predominate in its sacred functions over its appearance? The Greeks cultivated their bodies in the interest of the state, submitting them as vessels, to carry moral, natural perfection from generation to generation.

This conception has changed. Higher morality on the

basis of religious or humanitarian principles is left to free individual efforts, so far as it does not contradict the law. Consequently, the use or abuse of the body, except under said conditions, *is free!*

We have repeatedly referred to the necessity for a limitation in this direction. We have called on the mother and her influence to create laws where traditional habits have blinded the social eye from seeing the serpent hidden under the flowers.

The Woman's Christian Temperance Union is lifting with its dainty lady fingers the moral boa-constrictor, which coils with its deadening poison around the globe.

Josephine Butler, and with her an army of noble men and women, are trying to *free* man from his LOWER *self* by *lessening* his *temptations*.

In America, Elizabeth P. Peabody, and in Europe, the Baroness von Mahrenholz-Buelow, have kindled the inspiration of thousands to work devotedly for the earliest education and the sacredness of childhood.

Florence Nightingale has thrown new light on the practical adjustment of the relation between *man* and *man*, by pouring out high-born sister love in the service of *women* to *men*.

Each and all of these heroines in the battle-field against traditional habits have gained a victory in the formation of new *laws*, — *laws* to *protect man's better self*. Do they embrace the whole number of those laws necessary to protect man's *better self*?

By no means! For instance, that law has not yet been gained, which has been demanded for more than twenty years by its stalwart advocates and friends, for the granting of *mothers' natural* rights, and the free fulfillment of *her motherly duties*. Our hospitals, our asylums, our prisons, our pulpits, our schools, our arts and sciences, and our workshops are influenced by women. What a vast field for womanly influence to protect *man's better self!*

But what can be expected, if this does not *originate and develop itself in the home*, in the union of a higher parenthood? *Here, at the root of the root*, the sacredness of the body has to be written every day anew, by words, by deeds, and especially by *examples*. *Here* the body has to be regarded as the vessel for holding and perfecting the creative powers of coming generations.

No senseless vagueness should guide the coming men and women in their wonderful earthly mission as *the coming fathers and mothers*. There are ample means to abolish this vagueness by *instilling truth*. For instance, the insight into the development of a beautiful flower, in its gradual typical perfection, to become a mother (see "Aunt Emma's Botany"), in all its details and parts of growth; also the hereditary influence of insanity, idiocy, and drunkenness. *Bodily* health, *bodily* vigor, *bodily* beauty, should from the beginning be recognized by the child as superior gifts toward the fulfillment of this mission. All efforts to perfect these gifts should serve as means to

understand their value *for higher purposes* as a *part* of the *whole*. The time is not very far distant when a sickly body will no longer be regarded as a misfortune (this does not refer to passing common maladies), but as resulting from a neglect of *self-knowledge and SELF-CONTROL*; a neglect of higher religious and moral obligations by ignoring "the sacredness of the body."

II. SPIRITUALITY OF SELFHOOD.

Man will never realize the progress in self-improvement of which he is capable, until he discovers the laws by which he has become what he is, and uses the knowledge according to principles and methods, in order to *make* himself what *he can be*. With this truth, we stand in the open thoroughfare of life, following the stream of idle passers-by. The marvelous combination of bodily and spiritual powers strikes us with equal force in the careless smiling of the baby in its mother's arms and in the solemn lines inscribed on the tombstone of a great thinker.

As the wondering baby, who seeks to know if the hand it grasps is "*his own, or not,*" we too are all seeking to know "*what is our own, what not.*"

The foregoing feeble attempt has been directed to awaken a desire for the solution of this great question.

The wonderful book of Preyer, which conducts us with deep reverence through the workshop of humanity, show-

ing the unity of physical and spiritual powers, has been given in abstracts to meet this purpose. It cannot be doubted that the knowledge so gained will bear fruit in leading to self-knowledge. Among the Greeks, bravery and generosity were the two virtues indispensable to the "free man."

Spirituality in selfhood represents the *unity* of man's inborn forces concentrated in thoughts, aims, and actions, in his relation to God, himself, and others, which leads to the study of and submission *to law*, the same for all.

Over two thousand years have passed since the Greeks attributed the highest virtues only to the "*free-born man*." Over two thousand years, and the women to whose hands we trust, as mothers and educators, every newly born child to develop its *spirituality in selfhood*, though living under the highest aspects of civilization, are still unfree; for they are not *legally* recognized as independent and responsible to *their own* children. It has been with deep emotion that the writer has referred to the increase of crime and its associates, insanity and idiocy, the accounts of which fill our medical journals. Daily knowledge, gained by earnest researches, tells that even the advanced age of parents, in many cases, becomes injurious to the moral constitution of man, while inherited vanity and the desire for possession produce a large contingent of criminal victims.

While we might excuse *willful disobedience* to wise laws, we cannot in our day excuse *ignorance!*

But as otherwise the whole structure of spiritual selfhood is based on the *knowledge of the sciences and natural laws pertaining to man*, and as *this* knowledge, again, is *decidedly necessary* for that *UNITY* in parenthood without which the development of *spiritual selfhood* cannot be completed, we request once more, in the *interest of the nation* and the human race, the granting to both sexes that *preparation for fatherhood and motherhood*, of which we have spoken before in our formal petition, repeating:—

Not until the science of life and man is equally understood by *men* as well as by *women*;

Not until this understanding brings *equal weight* of *responsibility* to *men* as well as to *women*;

Not until the preparation for fatherhood and motherhood forms a *lasting curriculum* in *our higher school instruction* and *in our UNIVERSITIES*, can we expect a sound and lasting progress of mankind.

CHAPTER X.

THE IDEAL NURSERY.

- I. Nurseries to be built and arranged on Purpose. — II. Children's Toys. — III. Children's Stories. — IV. Children's Picture Books. — V. Home Labor in Common. — VI. Home Festivals. — VII. E. Marwedel's Circular Sewing, Drawing, and Paper Cutting. Kindergarten Suggestions. — VIII. The Sand Table. — IX. The Dolls. — X. Friday, the Day in Common. — XI. How Botany is played in the Nursery and Kindergarten. — XII. A Programme and the Method of Development used at E. Marwedel's Kindergarten and School.

HAVING been for years requested by Miss E. P. Peabody and others to give an insight into my real living with young children for the purpose of leading and assisting them in gaining fundamental knowledge by *self-instruction*, I have at last consented to do so, and the following pages picture a few such hours spent with the children. They are true pictures, but they lack life; they are only hints, and will remain lifeless till they are re-created by a spontaneous and original conception.

I. NURSERIES TO BE BUILT AND ARRANGED ON PURPOSE.

Mamma said nurseries were *not* built for the children, but they would be, if mammas would make the plans of houses. So we at once planned one, and made a story of it. It is the biggest and sunniest room on the lower floor in the house. Our hall and the nursery make

one room, only divided by a large folding door; so in winter, when we cannot go out of doors, mamma opens it, and we have just as good a run as if we were out of doors, and while we are in the hall she has all the windows opened. In the hall, we have in winter our bar and the rack and hand swing, and a jumping pole. The large folding door we can use for bouncing the ball. On one side is our cabinet of shells and pebbles, which were washed around by water. We found them on the beach last summer, with papa and mamma. And do you see the beautiful brown branches on the wall, with the nest in them? That is from a manzenita-tree. Then you see the hickory, the redwood, and laurel. Uncle sent us some beautiful orange-wood,—it is light yellow,—also chestnut and walnut; he left one side with the bark on, so that we might see what kind of dress or skin the trees wear,—each one different. And when grandpa came he said he would give us a surprise. And on Sunday morning we found all the pieces of wood nicely cut, the name of the wood written on it, and one end polished, so that we might see how the sap and the strings or threads (they call it fibers) grow together, sometimes making beautiful patterns. But of some kinds we have two pieces, and we want to send some to our cousins, who have very different trees in their country.

At the bottom of the cabinet mamma has placed her own pressed flowers, which she gathered when she was a little girl. On some of the pages she pasted all the

round leaves she could find, then those a little longer, and longer still, till they became like blades of grass. And she did the same with the flowers. First, she took those with four parts (petals, they call them), then those of five, then six and eight parts, etc. And grandma has written on each page where her little girl, who is now our big mamma, picked all the leaves and flowers. So in the evening mamma takes baby on her lap, and then she tells us such nice stories, about where she picked the leaves and flowers. She has also another book, in which, when a little older, she drew the outlines of the leaves, and there we found grandpa's name when they were well done; and sometimes it could be read that he gave her ten cents to buy a birthday present for Henry, who is now our uncle. And mamma often remembers what she bought, and how she spent the day. Papa has promised each of us children such books as birthday presents.

Our nursery, which mamma says is lovelier than ten parlors put together, opens into the garden, and includes the hall, which opens into the street. The lawn comes up to the window; the trees are a little farther down, so we hear the birdies sing, and see them build their nests.

In the nursery are two big bow-windows, on each side of a large folding door; in one of them is our winter flower garden, of which we children take care. The ivy grows all around the window; the heliotrope, the roses, the violets, and the mignonette, when in full bloom, make

a real garden, giving sweet odor by opening the windows. And there are two little green frogs in it.

On the other side, in the bow-window are many little birdies, a gray squirrel, and two little brown mice, all living and playing together. The birdies lay eggs in the spring, and have little ones, and so tame are they that they go sometimes on the other side of the bow-window into *their* garden, as we call it. At the bottom we have some fishes in a little pond. But in the summer papa has a large cage and an aquarium under the trees. Some animals in the salt water cannot walk; they are fastened like a flower on a rock; so Aunt Emma calls them the living flowers under water. Evenings, at dusk, when mamma and papa sing with us,—papa sings, and mamma plays on the piano,—we open the inner windows, and Willie says the little birdies and squirrels listen just as well to the music as Nero, who insists on coming in; also gray Bambino, the cat, which got a little red ribbon and a bell for Christmas. And Lulu, the little canary bird, always sits on mamma's shoulder when she plays.

The piano is in the nursery; mamma says it was the very place where it should be, if there was only one in the house. When baby is a little fretful, and cannot sleep, mamma at once plays him to sleep, and then he looks so sweet.

You cannot think how proud mamma is of her nursery library. It is a beautiful book-case, and you can find the pattern of all our furniture in Gothic style in Aunt Emma's paper-cutting book for bigger boys and girls, in

the second volume on Kindergarten. Every new book papa can find he buys for mamma, and then they read it together. In the middle of the room we have the big table, and here we play our color plays, our ball plays; and sometimes, when we have been very good, papa plays with us, and that we like ever so much. On our birthdays, grandma and grandpa join in too.

And look, this is baby's corner! You don't know what that means. It is a mattress. It can be folded together, and carried into the garden, the yard, and into the parlor. The parts are hinged together, and it is so light that one can carry it from a loop very easily. There is a kind of railing around it, with a door, to keep baby from falling off. Besides, it can hold on to it when it begins to walk. Do you see the little plates fastened to the railing? Those are baby's instruments, upon which it develops its sense of hearing. They are made of glass, of porcelain, of wood, of pasteboard, of iron, of tin, etc. Baby takes its spoon or its balls to touch them, and you should see its astonished face, hearing the different sounds. Aunt Emma says papa has a patent on it.

It keeps all its playthings in *one* corner; a hole is made in the mattress for that purpose. In this hole it puts its little balls and rings, and takes them out again, for hours, and it is never taken away by the nurse until all its toys are in the hole. For the animals, baby has a little stable, and for the play apples and peaches is a little basket hanging in *one* corner. The door is opened when papa and mamma or the nurse and the children

want to play with the baby, and then it has a splendid time. Sometimes mamma puts a sheet of paper on the mattress, giving baby some gravel or sand and flowers, and it fills little cups or dishes with it.

The walls of the room are made of oiled wood, so that we can toss the balls and bean-bags against them. Mamma wanted the floor made of cork ; she does not like carpets, and she does not like the wooden floor. I told her we had "over-all" at the kindergarten. We have some rugs we can take from one place to another to sit on, and the floor is of oiled wood, but papa has a double floor, as at the kindergarten, that gives less noise. Each one of us has a little upholstered footstool, which we take all through the room. Mamma and papa, of course, have a rocking-chair ; and one is for grandma, grandpa, and for nurse. They all like to come into the nursery, and stay with us till we go to bed.

In her nursery library, mamma has lots of books for us. She never allows us to read a book before it has been read by herself or papa. At the bottom of the library are our picture books. A great many of them are pasted on a long piece of linen, folded backward and forward, so that when we want to look at them, we lay them down on the floor. They are all labeled, so we know what is in the books. Some have animals, some show us the temples and houses of the beautiful Greeks, and some make us laugh, and we always take *these* out when papa and Cousin Harry come.

Our playthings are in a closet with some drawers and

shelves, and each of the children has its own part to take care of. In one corner of the nursery is the birthday table. When a birthday occurs in the house (we always know, because mamma wrote the dates on a piece of paper), we take a large white napkin, to be spread over the table, then we get flowers or green leaves and lay a garland around it. The cook or mamma always bakes a nice cake, to be placed in the middle of the table with some other little presents. Willie had a ruler and pen-wiper last week, and some bouquets. We lay them all around the cake, and in the afternoon grandma and grandpa come. And grandpa says, when he sits in that big rocking-chair which *belongs to him*, that he never feels so happy as when *in our nursery*. "The sun shines so warm and bright," he says, "the flowers are so fragrant, the birds sing so sweetly, the children are so good and happy, and mamma and papa love each other so dearly, that I do not know what I could wish more."

Papa tries to come earlier on the birthdays. The cake is carried into the dining-room, and all drink some lemonade, or, in winter, some chocolate. Sometimes we have a whole party on the lawn, and our little cousins are invited. But on grandpa's and grandma's birthdays we go over to their home, and we take presents to them and repeat nice verses. On mamma's birthday, papa always has some nice surprise (last time we all went on an excursion); everything was prepared secretly by papa and the cook, who went with us too. So mamma had no

trouble at all, but "to fold her hands and rest," as papa said. On papa's birthday, mamma had made us all some new suits, such as papa liked so much on our cousins, but thought he could not afford them. Mamma, who has her fixed money for housekeeping, had saved, with the cook's assistance, all she could, and nurse helped to make the dresses. At last mamma had all the money but three dollars. So she begged one from grandma, one from grandpa, and one from papa, toward his own birthday present. That was a *big joke*, papa said, and we all laughed very much; and papa said, next time he would lock up the sewing machine, because mamma and nurse worked too hard.

Mamma's sitting-room is next to the nursery, and when she leaves the door open she can hear all that is spoken there. Papa and mamma are always the first at breakfast, sitting at the table; then we children go in, to give papa and mamma a kiss, saying, "Good morning," before we sit down. Morris makes little bouquets sometimes, and places them under the napkins, especially when grandma is there. Even baby does it with its nurse.

One day, grandma said she would tell us how she did when mamma was a little girl. On some Saturday she wanted to take her three little girls out quite early; but much work had to be done on Saturday, and grandma had to help. So she asked her three little girls if they would not give their help, that they might

be ready an hour earlier. "Mamma, we are only too delighted to help you," they said. So grandma made three little white caps, and three little white aprons, just like grandma's. She bought three little brooms, three dust-pans and brushes, and each hemmed six little dusters; so they were ready to begin to sweep, to clean, and to dust, and mamma taught them a little sweeping song. One day, when they were all dusting and singing in the parlor and in the hall, grandpa came in. First, he could not speak at all, he was so surprised; then he took mamma in his broad arms and hugged her and kissed her, and lifted up each of his little girls with a kiss, and said, "he had the sweetest family in the land," and his little wife was the *best that ever lived*.

But another day, when he came again and found them all sitting in the garden opening peas, and the cat and dogs around them, he said he must have them with their little caps in a picture; and so the large photograph, which is still in grandma's parlor, was taken. And that little girl is our own dear mamma. She had her cap and apron still kept, often saying to papa — so that the children heard it — that she would try to give her children the same pleasure of working, when they were a little older.¹

¹ A lady in Oakland, who had her three little girls at the writer's kindergarten, has made a beautiful arrangement with her three young daughters, still going to school. Her chambermaid is given up, and they take her place; the daughters wait in turn at the table, and have

II. CHILDREN'S TOYS.

Toys are the child's first hieroglyphic language of life. They speak in sentences instead of words, growing in fullness and richness of color with its own growth within. They serve in all languages as the true interpreter of human knowledge and human feelings. Place the child in the center of this hieroglyphic sign-language, and you lead it onward to the height of its nature, or it glides toward its own steady downfall. Compare the graceful gymnastics among the Greeks with the sling-shot of our boys.

What a nullification of earthly existence, without these toys in a child's life! No joy so high, no grief so deep, no sentiment so noble, no hope, no faith, no love so great that the child could not connect it with its doll, whether it be of rags, velvets, or silks: it is his or her own; something it can give away graciously or keep to itself. It is her first responsible connection with the outer world, — motherly care, motherly pride, motherly happiness, — the frame-work of early preparatory duties, such as order, tidiness, cleanliness, faithfulness, kindness, and care. Toys are the reflectors of imaginative, creative powers within the child, opening wide

the care of the baby after school hours; they also do the darning. The mother speaks of the increase in high moral tone and improvement in their studies as wonderful. They have ample means, and the arrangement is based on purely educational principles.

dreamland avenues, on which the embryo artist and the practical navigator stand hand in hand with the daily laborer, to ripen in strength and knowledge for the battle of life. It is the rich and the poor boy lading their ships, with the sails blowing and the flags waving, with all the treasures their mind can grasp, in spite of one being a self-whittled block of wood, and the other a bit of elegantly manufactured ware. It is the *sickly*, the LAME child that has her garden, the richest, the most beautiful and the largest that can exist, condensed in *one* tiny flower-pot. It is the same little girl traveling with her doll carriage day by day on those unforgotten green borders of those deep blue lakes she *once saw* in full spring bloom, when papa was with her, and they were rich. It is the lonesome little daughter opening her tiny dining-room to the many little playmates she is longing for in vain. How busy she is, roasting and baking the few sweets and crumbs allotted to her; how painfully attending her hostess duties toward her valued company of paper dolls (which should be in the hands of every little girl, with plenty of material to make the different articles of the necessary wardrobe, not forgetting the scissors, the paste, the pencils, and the encouraging helping hand and words of the elders)! How she remembers the courtesy of her mother, the responsibilities of the cook, both having fallen on her shoulders to-day! To accomplish this, the simplest representation of the idea was sufficient, and the \$300 spent by the Nebraska man at

Chicago for the outfit of his daughter's doll did not furnish *an atom of higher* CHILD'S pleasure to her than the *rag* doll of some one's *poor* darling. Who wonders at the small child's liking for small things? Common-sense dictates their sizes by the fitness of its little hand to hold and handle its treasures. How different with the larger children! Their steamboats, steam cars, carriages, horses, kitchens, doll-houses with furniture, have almost every size, yet none of them are based on a comparative measurement.

The objects mentioned, capable of being instructive, are all that can be desired, with the exception of *comparative measurement*. Introducing from the beginning a comparative measurement, for instance, an inch to a foot, or one tenth of a meter, or even half an inch to a foot, in all children's toys, the child would from the start overcome the existing vagueness of impressions in measurement, learning practically to detect the monstrosities in art, even the common exaggerations in words and actions. Moreover, this early conception of exactness and truth would furnish our children with a moral training that cannot be over-estimated. We find some imitations of porcelain animals, almost perfect concerning their artistic conception as family groups (the writer refers to one special kind), but as to their relative size, between the mother and the young, they are in great disproportion. Insects should either be made life size or they should be enlarged. The writer observed a toy called an

aquarium, the animals being very well executed, but as the crab was of an equal size with the whale, it seemed to the conscientious teacher impossible to use them. The toy stores have some rubber birds of life size, of French make, answering fully the artistic details and refined finish of French goods. A few of these birds, a good imitation of a mouse, a frog, a butterfly, and a caterpillar, all of life size, in connection with the handling of the domestic pets, would suffice to direct the child's attention to the differences of animal construction, and their modes of life. A little girl between the first and second years was presented with one of these elephants, made of gray cloth, to which the child could not be induced to pay attention. One day it was taken to a circus, in which an elephant played an important part of general amusement. As soon as the baby went home it searched for the despised elephant, lying in a corner, caressing it, making the elephant its most beloved toy, not willing to part with it, not even at night. It was evidently the connection of ideas, and the pleasure, the life-giving element, that changed the opinion of the child.

Fortunately and *unfortunately*, the prices of children's toys meet in their extremes. A *dressed* doll for from five to twenty-five cents is too cheap. "Too cheap," because the child should learn to dress her little doll herself, in which she would delight if animated by some older persons, instead of being constantly told that it was not worth while to dress it when it could be bought so cheap,

utterly ignoring the interest of the child by non-development of skill, domestic habits, and higher pleasure. "Too cheap," furthermore, in leading the child to ignore in the cheap object the obligation of care and saving, constantly reaching out for *new changes* and *new desires*. And even here we meet again our children's fate, "ready made." Our dolls and nearly all our toys are completed (except those derived from Froebel's method), with eyes that open, a mock imitation of the human voice, the mouth to open and shut, and the latest fashions in dress. What is left to awaken the imagination of the child who holds a twenty-five dollar doll in her arms? If you speak more of the *price* and the *qualities* of her doll than of any other pleasure in it, *not the doll*, but the *money* and the *silk* and the extra qualities fill the thoughts which pass through the child's mind, nor does she forget the thirty-dollar china set, and the *real diamonds Molly's doll* received from grandpa in a *pair of ear-rings*.

III. CHILDREN'S STORIES.

The providing for our children, natural humor and wit should take one of the highest places, not forgetting that the frolics of youth differ from those of Uncle Sam. Those dealing with children know of the moral, intellectual, even physical effects of story telling. There is no surer means of fructifying the minor germ with a higher sympathy for life, than by children's stories, "the tim-

bers of the soul," joining soul to soul, the poetical waves that carry like a soft breeze the sweet murmurs of childhood's simplicity, in words and actions. They must present nothing strange, nothing artificial, but the utmost delicacy in form and thought, fragments of beauty, of harmony, of faith. Yet one must have this all in one's self. We may deceive man, but we cannot deceive children. Do not say, "The child has to know the dark side also." It has been found that nothing created more bad habits among children than the period of the so-called "Strulvepeter Literature," that is, showing pictures and telling stories of children's faults.

Make the child strong in the good, and instinctively it will reject the wrong. Let it grow under the impression and breathe in the spirit of the great unity in the universe; let it sympathize with that divine motherhood and fatherhood and babyhood which unite all forces to one end. Let it *feel* and *see* and *respect* the unity between the tiny flower it holds in its little hand and the puppy's barking at its little feet, held under the same law of perfection and restriction as itself. All growth fulfills itself in unbroken silence, under the chords of harmony. Lead the child by words and deeds to the conception of this harmony in man and nature. Or are heroism, kindness, righteousness, self-negation, resistance, truth, justice, diligence, obedience, the fruit of mistrust? The world needs character to overcome shrewdness, — not the so-called smartness and shrewdness to defeat character. It

is a mistake, strongly affirmed by the experiences in our kindergartens, that children are born lawless. Preyer inclines exactly to a reverse statement, saying that the baby a few months old showed a divine tendency for good habits. Look at the reports of the most depraved children in the kindergartens. How soon does their assimilation with the silent growth of kindness and righteousness bear flowers and fruit of utmost delicacy! Is it because we have turned their visions back to the black side of life from which they came? Or that we have lifted them up into the sphere of harmony and beauty by the better atmosphere they breathe? Roughness, coarseness, boasting, bodily force, "I don't care," and disrespect to law, have nothing in common with a gentle but firm resistance,—independence of thought and action,—identical with truth, uprightness, and friendship.

From this stand-point, mothers and kindergarteners should invent and tell stories; any event of the day, of the hour even, may be turned into a story. The writer once met a little expert in story telling. He had committed a selfish deed on the night before, and told a denying story on the morning he came to the kindergarten. The writer then told the children a story, describing the wrong-doing of the little culprit in all its details (without naming him). The child listened, but said nothing. But when he arrived home, his heart opened, he fell on his mother's neck, and bursting into

tears, said that the writer saw him through and through, and that he *would never, never tell a story again.*

Educators as well as moralists are opposed generally to fairy stories; and their reason, that it leads the child to untruth and falsification of imagination, is not quite unfounded. Yet some of Andersen, Grimm, and a few others may be called very acceptable, and the writer, for instance, will never forget Æsop and Gellert's animal fables read by her when a child; no nursery should be without some good fables and their illustrations.

Stories may refer instructively and poetically to animal and plant life, connecting their existence with that unspoken yet audible "individual" and "symbolic" language, the attribute of each object in life; which, according to Froebel, is especially fostered and cultivated in our kindergartens, as he found the child, nearer and truer to the language of nature, intuitively drawn to it. A splendid help in this direction, recommended to every mother and teacher, is Dr. Asa Gray's "How Plants Behave," "How Plants Grow," and "Little People in Feathers and Furs," Spector's fables, and others.

IV. CHILDREN'S PICTURE BOOKS.

With the greater insight and sympathy into the beauty of nature, child literature, including their picture books, will be controlled by higher principles. They should be



considered with regard to their motives, their artistic execution, and their proportions in size, as well as the durability of their material. Germany employs her greatest artists for the production of children's pictures, using the poetical conception of the child's incidental conditions, turning them into the most delicate gems of human idealized sketches. They speak without words, touching the sympathetic feelings of the child by their poetical simplicity as classical masterpieces. Not less valuable are the humorous sketches, or stories in pictures, cultivating witty logic and imagination. Natural history objects, as landscapes, enlivened by the corresponding animal life, are excellent; also, historical pictures of the habits and life of the ancients, beginning with the Hebrew, continuing with the Egyptians, Greeks, Romans, etc. Pictures which cost almost nothing in Germany at Braun, Munich, Bavaria, might be made useful by any intelligent father or mother in leisure hours in the evening. The author bases at least two thirds of the mental self-activity of her pupils on the scientifically arranged series of impressions given by pictures filling the walls, and maps, embracing Brockhaus' famous illustrations to the encyclopædia of the same firm.

The indelible impression from this manner of teaching she herself received when seventeen years old by reading "Adele and Theodore," the educational treatise by Madame de Genly, where the mother arranged the whole chateau instructively to her children; having, for in-

stance, one five-sided room representing the five countries, with the illustration of their *chief products*, in the natural objects themselves, people in costume, sceneries, and buildings.

The writer, having for years collected pictures and journals, arranged a basement play-room in her kindergarten, sixty by thirty feet, as follows: arches and pillars were cut out of brown silesia, leaving a brown strip of one foot at the top. The bottom part was finished as a dado, with a border of Chinese figures printed on cotton cloth. Between the arches were scarlet panels, having the full width of scarlet cotton cloth, on which the young ladies of the normal class arranged most artistic groups of four and five feet high by two and two and one half feet wide, of various instructive subjects cut out of journals. For instance, beginning with ethnology, the savage tribes, the life of the nomads, was followed by that of the Hebrew, Egyptian, Greek, Roman, etc. The architectural groups, beginning with the stone dwellings, went through the antique, the Middle Ages, the Renaissance, to the modern architecture, including present buildings, depots, and bridges. There were groups of human races, of dogs, horses, cattle, flowers, distinguished men and women, in short, almost everything, not neglecting comical scenes. Some plants growing at the outside were turned inside around the windows, and a brown "over-all" carpet made the whole place an ideal play-room, in which the

child could elevate and cultivate its mind and body through harmony and self-activity. It was a work of enthusiasm and love in common, *children and students, great and small!* We speak of the uncontrollableness of our children on the playground; have we tried enough to reach and soften their minds by æsthetics and beauty? Why is it that my forty children, from four to ten years of age, could play in a cultivated garden, and seldom step on any of the beds? And how is it possible that a country like California can have school-houses *without a single tree around them?* Are we in reality so blind in condemning our children, as to forget our *own obligation to them?* It was pure love and a sense of justice that created our play-room, which in itself directed the children educationally. For years I had been thinking of it, collecting for it; once realized, it worked perfectly. Any bad impression was avoided, and we may ask the mothers of the land, if there was union in strength, why should we not be able to control the vile literature and pictures which too often fall into the hands of the children and youth, and introduce much needed better impressions? The government of the United States has its officers for the purpose; why can we not have "honorary" local officers in each town or city, filled by mothers, communicating with the State office?

V. HOME LABOR IN COMMON.

Our realistic age, marked by its critical, argumentative, and analytical dissertations on cause and effect, reflects its spirit in our customs, our language, our literature, our homes. The former natural tendency toward a community of sympathies in the family has been destroyed by the demands of the day for what is "ready made," — ready-made food, ready-made clothing, *ready-made homes* (*boarding-houses*), — giving free scope to a negative critical conception of subjective and objective conditions.

Our homes are void of sympathetic efforts for "labor in common"; and our schools are not prepared to fill the gap! *No great man or woman can be expected to grow out of the narrowness of an early negative mind.*

We complain of a lack of morality, forgetting that the growth or destruction of morals depends on the same organic law as that of any other growth; that is, "favorable conditions." "Labor *in common*," the most valuable and indispensable fertilizer, is replaced by *morals from books*, — "STONES for bread! DEATH for life!" How does this condition affect our children?

Without a successive development of the innate creative powers, with no break, no change in the monotony of the lifeless proceedings of the day, no vigorously exciting, practical activity of childhood is fostered except in the kindergarten; and yet, though most ready to help, who is more rebuked in their divine spirit than our children?

There is no exaggeration in these words ; at least, not in an average city life. For years the author has asked her children, from four to ten years old, Monday morning, seated for the first half-hour in a large circle on the floor, by what actions they had made themselves useful at home on Saturday and Sunday, impressing by conversation or tales the necessity and pleasure of usefulness. The experience thereby gained was that *all* children delight in work, but that *very few* PARENTS see the educational necessity. For instance, a very lovely, conscientious little boy of rich parents, with a devotional love for the right, was for a long time Monday morning compelled to shake his little bent head in answering "No," as to his questioned usefulness. Once, as early as six o'clock, the writer heard little footsteps in her beautiful vineyard arbor (eighty feet long by eighteen wide). Anxious to know the name of the early guest, *no name* could be obtained ; but a sweet, soft song, accompanied by the clapping of little hands, continued for almost an hour, till the breakfast hour called him home again, from which he returned at the usual hour of school. But with what expression in his face, with a happiness never to be forgotten, he sat down with the rest ! At last came his turn to be questioned, and his little heart burst forth, "I SWEPT THE KITCHEN," he said. He had found at last a human being ready to accept his services. Think of this picture of mind, in its full depth and breadth, educators and moralists ! And this

is only *one* of the *many, many* stories which could be told.

Mothers take refuge in saying, "There is no work," or that the trouble of superintending child's work, demanding sympathy, patience, animation, indulgence, steadiness, and PRINCIPLE, is too great, ignoring entirely what moral development is lost to the child. Besides, the idea to use work, and especially self-help, in and for educational method, so as to awaken sympathy with the needs and pleasures of others, thereby leading to a conception of duties to others, is still less instilled, and not *understood at all*; even in our kindergartens *sufficient* work is not done "in COMMON." The writer's parents had five servants and a tutor, but none of them were permanently engaged until found capable and in sympathy with the education of children. The body servant of my father, who had accompanied him in the war, was the mentor servant. At five or six years old my brother and myself had to set the table, the servant watching us. Nothing was allowed to be forgotten. Everything had its fixed place. When finished, we had to ask the cook if a special addition had to be made for a special dish. The servant was not allowed to give more than two hints. Before dinner, my father inspected the table with full military precision. If nothing was forgotten, it was stated in a book kept for that purpose. We had to make our own beds and to attend to our own wash-stands, under the con-

trol of a servant. My brother had to clean his own shoes.

The coachman instructed us in planting and cultivating the garden, also in the care of small domestic animals, of which he gave a weekly report. The nursery was kept in order by the children. My mother's sitting-room was next to the nursery, and the doors were always open. At dinner we had to listen to the conversation, which was generally in French, till dessert was served, when we could join the conversation. In good weather all took a long walk in company with our parents and tutor. Any number of questions could be asked at this hour; but stupid ones were narrated in a book, and read at the Sunday dinner. Our tutor had to show the same degree of capacity in playing with the children as in instructing them. At dusk all were called into the music-room. The whole family, including the nurse and tutor, sang and played. The educational care bestowed on the children was great, and has upheld and characterized the writer's whole existence, and that of the next brother and sister. The mother died when I, the eldest child, was little over ten years old. But whatever we children were and are, we owe it to our earliest education at home; though the later life, from ten years up after mother's death, with an uncle, a clergyman and his wife, in a remote country place, was not less educational, furnishing through a poetical solitude in fields and woods and a

curriculum of daily obligations, spread from the school-room to the kitchen yard and garden, a natural, joyful preparation for life.

When will the world learn to respect and venerate, in these simple and true events of life, the sacred rights of childhood? When will it learn to see the emptiness of mind and the shallowness of character growing out of our fashionable amusements ministered to our children for the sake of the parents, pleasing their own vanity in the moral and physical ruin of their children by dress parties, masquerades, theaters, dinners, and children's balls? Even babies are not kept unmolested from these children's monstrosities; for instance, a babies' party of children not over two years old, in winter, in the city of Boston, the Athens of America. (That does not say that Europe is doing much better at the present time.)

VI. HOME FESTIVALS.

It may seem impractical to refer to an educational reform so remote from common consideration. But justice to childhood demands at least the reference to it, as movements in this direction are known.

Not long ago, for example, England and America were strongly opposed to the Christmas tree; while at present, no city in the world gives a more general and lovely appearance in its green holly, with red ber-

ries, than the busy city of London. The Christmas tree has gained its ground all over the civilized world. Its lights are shining through the dreary monotony of winter life, wherever the small footsteps of our darlings leave their welcome marks. But in the name of humanity and childhood let us ask, are these lights truly kindled in that spirit which baptized the Christmas time with that great divine fatherhood and brotherhood, giving peace on earth by works of love?

Of late, we have not only statistically proved the increase of crime, but of the low character of the crimes committed mostly by young men. The church, the school, and the home aim all at the higher moral culture. The church stands out a protector and interpreter of religious faith and religious truth, leading to a higher moral discrimination of human actions; but beyond its influence in Sunday schools it does not educate man directly, at the most important part—the beginning of life.

The school is helpless almost in the same degree. It has neither the tools nor the leisure to turn the three chief factors of human morals—“emotional feelings,” logic, and control of will—into self-educating activities. Neither abstract knowledge *nor morals taught from books will ever develop human character*. Morality is a natural growth of self-experience and self-activity, fostered and strengthened under elevating example and proper direction. There is only one natural

ground for its growth, — the heart of the family, and its extension in furnishing and continuing the home and social conditions, the kindergarten.

Home festivals, in a most unpretentious form, are the very stepping-stones to cultivate that moral delicacy in individual attention and consideration which gives the Christmas time its unrivaled characteristics.

This wonderful inward life, blown and thrown back by the cold of winter storms into the depth of family tenderness and family ties, kindled and lighted up by the thousand little chips of love and gratitude and reverence, inflaming all the emotional sympathies of a past and a present time, to find expression in deeds of love and gratitude, — this wonderful inward life, with its supreme rights to follow the one we love to his inmost corner of hope and inspiration, what self-forgetting secrets, what unselfish planning, what love to others, have been hidden through ages under the green boughs of the Christmas tree, — this wonderful inward life, that touches us in our darling's merriment and laughter, asking us if the germs of their joys are sufficiently and deeply bedded and nursed in their sacred shroud of loving conception as to reappear in due time, loaded with bloom and fruits to those who call them into life and existence, — this wonderful inward life, falling from the silent Christmas tree, the symbol of "everlasting human mystery and tenderness," of sport and delicacy, with the fragrance of the deep, dark pine woods, and the brilliancy of

an altar, — who dares to set in place of its sacredness of human love, the loud, noisy, meaningless appearance of a Santa Claus? In this course of exchange of higher sentiments we find the basis of home festivals. However simple they may be, they nourish loving attention and consideration. They include family birthdays, each having a cake and favorite dish, mamma and papa's wedding day, a family spring and fall excursion, the recovery of an invalid, baby's first actions, the search for Easter eggs, grandpa's and grandma's visits, the first and last rose always to be given to mamma, the first moss rose which is for papa's button-hole, and the wreath of daisies on the head of little sister, who herself is a little daisy. They include the honor of bringing the slippers and carrying away the overcoat, not to forget the little wash-rags, the pen-wipers, the dusters and aprons and handkerchiefs sewed and hemmed delightedly for the happy sister and brother, and the birthdays of the servants. And where does this wonderful inward life find its undisturbed silent growth? Nowhere else than in the heart of the family.

VII. E. MARWEDEL'S CIRCULAR SEWING, DRAWING,
AND PAPER CUTTING. KINDERGARTEN SUG-
GESTIONS.

One day, dear Aunt May came to see mamma, telling her of a man by the name of Froebel, and how he loved little children; who had thought of something to do for them even when quite small; and that she should read about him, and so mamma did. Aunt told her "it was *no nursery*" if *Froebel's playthings were not there!* It was quite near Christmas. And the children heard mamma and papa talk a great deal together. After the children had gone to bed, they heard some men go into the nursery. It seemed as if the furniture was being moved, but the next morning everything was again in its place, but the children said, "You be sure Christmas brings us some beautiful things." Christmas eve they were all sent to grandma's; papa said there would be no room for them in the nursery until five o'clock in the evening; only the baby could stay.

The dear children put their heads together to guess, and they thought they would have a *big, big* doll house, or a *big, big* rocking horse, or a *big, big* farm-yard, and neither grandpa nor grandma would tell. So evening came, and there came the bell which called the children into the nursery. The beautiful Christmas tree was in the middle of the room, and sure enough, there was *something big*. It was a table box, with some sand in it,

longer than papa when stretched on the floor; also another table, with four chairs around it; mamma said, now she could have us play and work, and we would be happy. There were nice boxes with needles and all kinds of worsted, and they all wanted to begin at once. Yet mamma's work in the nursery could not begin till the next day. She told the children she wished they would place a chair for her, just in the middle of the room. The idea pleased the children very much, but they did not know what mamma meant. What was middle? But mamma did not want to tell them, and it seemed quite hard to make them know. Finally, she said, "Place the chair anywhere." So they did; and when they asked mamma if it was the middle, she only shook her head and smiled a little, saying, "No." And the children became quite interested, and they moved and moved the chair, and they laughed and mamma laughed, and shook her head, meaning, "No." Then Freddy came home from school, and he laughed too, and said, "Why, you should know better; put the chair under the gas-light, that is always in the middle." So they put it under the gas-light in the parlor; but mamma said she did not want it in the parlor, so the trouble began anew. Then Minnie said, "I think I know," and so she went back to the parlor and looked where the gas-light was, and she placed Marian on one side and Giles on the other, and said, "When I clap my hands, you march forward," which they did, and they came almost together under the gas-light, and then

they thought they knew. So they went back in the nursery. Irving said each must have a chair in hand; so they marched with two chairs, and when they came together, mamma laughed so much that they knew they were very wrong again. Then they said they would stop. And all day long the children thought of the middle, but everybody said they had to find out for themselves. Freddy said his teachers never asked him, but he knew the gas-light was in the middle, and so was his nose. But in the afternoon mamma wanted a shawl, and she wished to have it turned on the other side, so she said to nurse, "Do you not see the crease through the middle? Let us fold it together."

Hearing the words "middle" and "folding," the children all rushed together, and talked and talked together, and finally they went to the cook, and asked her if they could not have some strings, even if they were in ever so many pieces; they would knot them together while mamma was away. They went into the nursery and laid the strings down on the floor, like the shawl, and folded them together. But, oh, how hard that was; they never could find it; but Freddy, when he came home, thought he could help them; and when mamma came back they had just made a little dot in the middle of the room, and were sure that next morning they could place the chair on it. So, next morning, they asked mamma if she did not wish to have her chair in the middle of the room, and she expected another laugh again; but how much

was her surprise at finding the chair exactly at the middle! And all had a great deal to say, and they were very happy. Then mamma wished the children to place the four little chairs just in the front of her, all straight, all with the same open space between them, and it took the children almost a whole half-hour; but you cannot think how glad they were to have mamma's chair in the middle, as it helped them ever so much. Then, finally, mamma said she would open some of the many boxes she had, and give us something to do. That made us very happy. It was some holes made in bristol-board; and mamma told us to thread our needles with red worsted, and then put our needles down in one hole and up again in the next. So there grew a line wider and wider, and finally we came back to the first hole. Then mamma said we should tell her what we had been doing, and all burst forth, "We have been sewing something in the middle of a piece of bristol-board." "But what?" said mamma, and there we were again as yesterday. "Something exactly like the ball," said one. "Exactly!" said Minnie; "I do not think you can say so. Does it fill your hand like the ball?" And then Giles said, "Cut it out! cut it out! quick, and let us try." And mamma said, "Well, you may." But Minnie was right; she could not hold it like a ball. So mamma proposed they might try to find something like their sewing. The children delighted in that, and went to do so. Freddy was just passing by, going to school, and said,

"If I could only stay *away* from school, and join in your lots of fun!" Finally, all had found what they wanted. Harry carried a basket, Susie a broken doll-house filled with round things, but Earle held what he found in his hands and pocket. Mamma was preparing the sand table, of which we will speak afterwards, just moist enough to divide it by straight lines into squares. Her chair was exactly in the middle of the room; the sun shone brightly and pleasantly, filling the nursery with warmth and light. Mamma kissed each of the children, and then let them sit down. The little winter garden was opened, and a balmy fragrance streamed from the dear green plants and flowers. Mamma spoke of the beauty, the usefulness, and the necessity of sunshine, and it was compared with mamma's and papa's love and care. They were asked if they would not give thanks as the flowers thank the sun and the gardener in breathing out their fragrance, and they did so. Finally mamma sang a little morning song composed by dear Mrs. Horace Mann for her own lovely kindergarten, which reads as follows:—

" Good morning, glorious sun;
 Good morning, glorious sun;
 Good morning, glorious sun.
 How I love the light of the sun!

" God sends his bright spring sun
 To melt the ice and snow,
 To start the green leaf-buds,
 And make the flowers grow.

“God sends his love to man,
To make his goodness grow.
Let us be sweet like flowers
That in the garden grow.”

And the children asked her to teach this lovely song. Afterwards they made the shape of the sun with the fingers of both hands, and the morning-glory as it opens in the morning and shuts by night.

Taking sweet little Francise on her lap, she said, “Please, how many — when you were still sound asleep or enjoying your good breakfast — remember how many people and things were already working for you.” Then we spoke of light and sunshine and rain, that neither papa nor mamma could give or make. The children remembered the early rising of the milkman, the butcher, the baker, who give their night’s rest, and the hens and the cows that give eggs and butter, and the trees that give fruit, and they felt thankful to all, and especially to God who made them all. Then they sang a sweet morning hymn, a fond one, too : —

“Father, we thank you for the night,
And for the pleasant morning light.”

Then mamma said she was very anxious to see the round things they had found. Mary had a lime, Harry a little round bell from his sister’s rattle, Susie an orange; but she told her it was not round, but flat on each end. Earle had a big marble. Mamma was pleased, yet she wanted something like their sewing, to

which the children replied they could not tell, but show. Therefore, mamma told each one to find the middle of his or her square on the sand table, and lay those objects down in the same way as they sewed their cards. This they did. But all they could accomplish was to press them *half* in the sand. If they covered them more than half they could not get them out smoothly, and even by pressing them in only half-way, and trying as hard and as carefully to get them out again, nothing could be seen but a kind of a bird's-nest or a hole, such as the boys make for their marble plays. Just then Cousin Alfred stepped in, and he said he could make them any ball. Of course, we all wanted him to try. Then he said we would have to leave the room, and when ready he would call. He moistened the sand till he was able to make four balls, then he thought he would give them a surprise. So he asked his aunt to give him some fine white sugar to cover one of the balls. Next he covered the second with coal-dust. For the third one he took red brick powder, and the fourth he covered with bluing from the wash-house. After this he called us in, and you may imagine the surprise and the pleasure before they were able to find out the whole story. But when one ball after another fell to pieces, we wanted to know the reason why. Earle said he did not think they were balls at all, because he could not roll or squeeze them; and Susie said she was sure if she should throw the red ball against the wall it

would come down in red powder. Then mamma asked once more for something like their sewing. Harry had a saucer, Mary a glass, Susie a pill-box, Rose shook her little head, and would not show. Harry's saucer was first put in the sand, very, very carefully, and very carefully it was taken out. But the impression left did not look a bit like the sewing. There was a small ring making a little rim, besides another impression like the under side of the saucer.

All they could do was to laugh. Next came Mary. She put her glass carefully in the sand, and when she lifted it again, she found a beautiful star and a little rim deep down in the sand, but it was not like the sewing. Susie had her-pill box. She thought she would try the cover, which she pressed in the sand. And taking it up, what a general surprise! there, sure enough, was just such a ring as they had been sewing. Then they had a long, long talk—if they sewed a ring, or if it was a piece cut out of the ball, or if they sewed what mamma called the outer edge of the ball. But the children were happy, and Prescott said, "Never mind about the name; sometimes we may call it a round ring, when it looks like it, and a ball when we color it."

Afterwards they asked mamma if they could not make rings in the sand, and put something more in the middle of the ring to make a wheel. Mamma said they might, and it would lead them to the circular drawing of the rings. Then they made a moon, and Rosie wanted to

make a round face; two dots for the eyes, one for the nose and two lines for the lips, and it was a very funny face; and when she drew it on paper afterwards it looked still more funny, because she made two red cheeks with pencils. Then Charley stepped forward, and said, "I think now I know why that ring is called 'circūs'; papa said so one day, and is not a circūs round? I can make it, too"; and so speaking, he pressed a butter dish in the sand table. He pressed it down very, very deep, and in taking it out, it was half a ball he had pressed. Then the children took the butter dish to look at it, and turning it around in their hands they found it very difficult to judge of it. Irwing said the ball is all round and high all over; the butter dish is on one side a ring, and look here, inwards it is sliding down till it is all flat, and when you turn it on the other side it is almost the same, only it slides the other way. But Marion said, "How is it with the water? On which side will the water be?" Then Marion said, "Don't you see, on this side it is an umbrella and it runs off, and on this side you can drink from it." But Giles said if he could have another butter dish he could make a perfect ball. He received another dish, and his disappointment was very great, as with the seeds once before, but he said if he could cut the flat parts off, he would have almost a perfect ball, — something like it, perhaps a little different, but after all, round. Finally, all the children decided the butter dish was "a standing-up ring," and the ball "a ball all over"; and mamma said

she would give them next time a piece of clay to make a ball and a butter dish, and then *they would know surely the difference*. Mary said, "Why not make the butter also? I have a little churn, and can make real butter in it." Then mamma told how butter was made, and asked them if they ever thought how much the green grass and the yellow flowers had to do with their fresh butter, and they thought it very funny.

From this time the ball and the ring — finally they called it circle — and the middle were observed everywhere; so much so that mamma said she would make cards, called "Aunt Emma's Sewing Circular Cards," which would be their playmates for a little while, and they liked that idea. Therefore, next morning she had another sewing card. I shall never forget one thing mamma always made us say: that was, "*one ball*" and "*one ball*" — not two balls, or *a child*. In holding the sewing card up, she said, "What do you see?" Well, we saw, as on our first sewing card, holes made for sewing. So mamma said, "Please use these holes as you did before, and then let me know." Now we were very busy, and when we had come back with our needles where we began the circle, we saw holes still for another one, and we sewed it also, both with red worsted. Mamma said she would give us a red pencil to color the last one. *That was just beautiful!* Then we found we had one one, and one one, making two ones; and mamma made us find ever so many things in the two

cards which were alike and unlike, or the same and not the same; and mamma made us point to all things which were one and one times in the room, and in the garden, and we told her when we saw one and one horse on the carriage. But then she wanted to know of all the *differences* between the two sewing cards. Eugene said there was no more middle. Giles laughed, saying, "Everything has a middle, even my nose." After many things referred to, they said it was very hard to tell all the *changes in words, but the sand table could*. So mamma told each child to find out for himself. Some took sticks and made a real sewing card in the sand; then we put a stick in the middle, and then we knew we had the middle, and we found a left and a right side, so we put some rings there. By and by we found some things that were alike, or similar in shape, size, color; unlike or dissimilar in number, color, position.

On the first card we found only *one* circle; on the second one and one circle, making two circles. The first sewing card showed the one circle in the middle, while in the second there was nothing in the middle, and the two circles on the top and bottom. When Alfred was passing by, he looked at the card, and turning one of them, Georgie said, "Now there are left and right." This brought out a great deal of talk, and the arms and the head and the feet had to serve to make things quite clear. For the little ones mamma made a little boy by putting two short hair-pins at the bottom of a worsted ball, mak-

ing the legs, and long ones higher up to make the arms. What a lot of fun that was! Once she made a man from a handkerchief; he had arms, right and left, a head on the top and legs at the bottom. That was ever so much fun, too, and we all learned what was right and left forever.

Another difference was, that the circle on the first card was without color, while on the second we saw one was colored, the other not. But mamma told papa what is real hard to remember of likes and unlikes, similarities and dissimilarities to be found on these six circular sewing cards; they were, shape, color, size, number, position, direction.

And papa said he thought no little girl or little boy without this knowledge could ever learn to see rightly, to think rightly, and to describe things rightly. So mamma invited papa for the morning after the next, to have a great deal of fun. And, to the hearts' delight of all the children, he came. They had been sewing the third card, marked with three similar circles in three different colors, one red, one blue, one yellow. Papa was quite surprised to hear what these three simple circles told the children, in comparing them with the previous chart. And he was amazed to learn how much ingenuity, as he called it, was needed for mamma not to tell us, but to lead us by many, many little things — "hints," papa called it — and questions to find out by ourselves their position; either lying over, or under, or between, or overlapping

each other, being on the right and left or on the top and the bottom of the middle, etc. Then mamma promised us a play: to be asked by a playmate to place a ball either on the top or bottom, to the right or left, over or under, or between and behind something, knowing it would be a great pleasure, and so it was always, and Aunt Emma knows that, too, and her loving children, especially when a nice story of "under and over" follows. Finally mamma said, "Now we will have still more pleasure *extra for papa.*" So she handed each of us three colored pencils to color the circles with, and papa said he never dreamed that work-play like this could make the children so good and so happy. But mamma said, "Now, papa, watch"; and while we were coloring and having a fine time, she saw us suddenly stop, then go on, and stop again, and at last left the card. She saw us all wondering at something. We did not look at our little neighbors, and went on silently. Then Isadore burst forth, "Mamma, I ha-ve — fo-ur colors, and you gave me but *three* pencils. I have green, and you did not give it to me." Then *all* spoke at once, so we could not hear our own words, and papa said mamma made all his little tots *inventors and artists from the start*, and as they always had been the happiest people on earth, he was glad of it.

So papa left, but he took the six sewing cards with him, and on being told that No. 4 card gave the comparison of size shown in another way, that is, "ring in ring,"

introducing "inward and outward," which is supplemented on the last card by two straight lines, one running up and down, the other left and right, cutting the circles in many different pieces, which by and by we learned to compare in shape and size, he said he would show them to the Board of Education, and question them just as mamma had questioned us, and he would ask them if they thought they ever had a better start themselves; and if the *beginning was so good*, and showed so much practical common-sense, how good the rest must be. *And he really did so!* But we do not know what the board said, only we heard him saying, "I know one thing surely, and that is, if mammas were IN ALL BOARDS OF EDUCATION, and could tell us what our young children need, *because they know them, and handle them, and love them better, we could do THINGS THAT WOULD BE MUCH BETTER.*" The next morning baby came in with her basket full of Aunt Emma's color play No. 1, called "Grandma's Buttons."

They looked in some way like our sewing, at least on one side. They have beautiful colors, and are of two sizes, but none can be swallowed by baby, or put in its nose, and some have holes so that they may be strung up, and therefore came the name, "Grandma's Buttons."

Mamma had to leave us. She told us to play with baby and her buttons. And what beautiful things we made. Each started from the middle. Then we played one on the right, one on the left, on the top of it,

always making our choice of colors, so that mamma might call them patterns. And we asked baby if we could have them very often, because we knew now of the middle, and that they must always lie down in a perfectly straight or curved line.

But baby could not answer, but kiss. Mamma said we could use them, if they pleased us so much, and in time we could draw the pattern we laid down; and also we would make the outlines of a watch and a pear, a hat, and many other things. And do you know the joke of Rosie? She laid papa's watch down and the buttons all around, and it was a perfect circle; then she took two sticks to make the hands, and some for the chain and the locket. But she thought next time she would not be helped in that way.

The greatest pleasure we had with grandma's buttons was in the evening with papa and Uncle John, not to forget grandma and grandpa. Then we called it "see me quick." For instance, five or seven or nine or thirteen of the buttons were placed by one who held a watch, and we were allowed to look for just a second at the figure and the difference of the colors; then the pattern was taken away, and all tried to make a similar one. But oh, the fun we had in the mistakes, till the eye and the mind were trained "to see quickly" and correctly. Uncle John said that reminded him of the carrying of mind-pictures, so much used now in our schools to abolish the memorizing process. And papa said this

was another thing he would like our school board to study; it would make them laugh, and that was what we all need. Children who have to learn most, should do it with pleasure. All work should be done in earnest to do it well, but without pleasure no assimilation of the mind will take place.

Mamma never made us sit still very long, and what we could do standing and walking she preferred. Our little marching and movement songs were many, and we will speak of them hereafter.

VIII. THE SAND TABLE.

One day Aunt Emma sent mamma a letter about sand tables. Enclosed was one from her pupil of San Francisco, and kindergartener of the Silver Star Free Kindergarten.

Mamma was so pleased that she thought she would like to see it printed in the "Ideal Nursery" for some one thousand other children. It reads as follows:—

The sand table is not only one of the most interesting but most instructive features of the kindergarten, leading the child to a high moral development by making him, when he becomes a member of a social organization, learn quite early as an individual to respect the work of others, and to overcome his own selfishness. While standing at the table, he is told to mark out a representation of the room, some streets, or a park, or anything he likes, under the guidance and some instructive words of the kindergartener. I told the children that the life of man began in a garden, their first work being to dress and to keep everything aright. So the children were left to dig, to sow seeds,

some peas, flax, and some grasses. The seeds were scattered all over the sand table. They were covered with earth, so as to keep the tiny baby seeds warm. Every day they were watered, so that the little seeds would not get thirsty, and it became quite touching to watch the eager eyes turned daily to the sand table to see if the little seeds had sprouted.

At last, one morning we saw the green shoots pushed into the light, and at the end of the week we had a beautiful green lawn. The children were just delighted. It was then suggested that a house and a barn should be built, and walks and drives made, and that each child should make a part of the house or barn. The house was made of bristol-board, with a real pattern imitating bricks and paintings. The roof was made of gray and maroon, weaving mats to represent slates. The doors and window were sewed on gray bristol-board imitating paintings. The well was also made of bristol-board imitating stones, and it had moss growing all over it. The tiny basket, suspended by a chain, was made of slate. This work lasted fully six weeks, and the children were instructed regarding every part of the house, the barn, and the beautiful garden, as far as they were interested in them. The walks were covered with very small shells, and a rockery was composed of tiny little stones gathered by the children, crowned at the top with a tiny pot of ferns. They were so eager to complete their "high-toned house," as they called it, that whenever recess came, they preferred keeping their seats in order to finish their house. Here the children learned to share generously, to accept graciously, and to yield courteously to the *social training*,—one of the most important features of the kindergarten. On the whole, the child is led unconsciously from the created to the Creator.

B. M. Bössé.

Then Aunt Emma herself wrote a few lines. Sometimes, she said, we would play geography, especially on Fridays, when the older children and all the little ones

play together. For instance, we would have a scene amongst the Esquimaux. The little ones would cut all the snow out of tiny pieces of white paper, and the older ones Esquimaux, and the babies and dogs and canoes. Miss Daisy would cut a sledge and some reindeer in front.

The huts were made of sand. On the ocean there were the seals and the walruses, also of paper. We stuck in some sea-moss and tiny little bits of trees, and one day we had real smoke coming out of one of the huts; and Georgie brought some gray squirrel-skins, and Aunt Clare got from the furrier a whole cartful of furs, from the polar bear to the gray fox. We had a splendid time with all this, and Prescott was quite astonished at the fur he had on his own head, and that it pained him severely when we tried to pull one of his hairs out. Miss Leonie was quite an artist in laying out parks. They were very beautiful, with temples, grottos and islands, ponds and trees, lawns and flower-beds, the borders made with the tiniest flowers we could find.

For the walks, she took a brick from the fourth gift, with which she pushed the sand gently aside, and her curves and drives would have served any landscape gardener. Of course, that inspired every child, young or old, for the work in the sand table. Every Friday, when we all assembled in the three large rooms thrown into *one*, the sand table presented a feature. Each kin-

dergartener of the training class was expected to take her turn in laying out the sand table, sometimes illustrating a story. The possibility for doing this was greatly increased by having all sorts of objects to illustrate an idea. There were all kinds of animals (charming family groups of German make), trees, carriages, houses, small dolls, besides a large box with partitions, in which all sorts of broken and unbroken remnants were kept to satisfy the creative inspiration. A bureau contained in different boxes our treasures, and the good rule was, unfortunately, not always kept, — which may be considered a grave wrong to childhood, — namely, that everything, after being used, should be restored to its own place, and even counted, instilling the habit of order and PREVENTING dishonesty.

For this purpose, every week a child was appointed to be either the *responsible* herder, gardener, the coachman, or nurse. The very idea, to be a herder, or a gardener, or a nurse, which sometimes fell to a boy, gave a great deal of fun and just aspiration. The very name, "herder," had a magnetic effect. This has a similar effect on grown people's inspiration. Children's greater imaginative powers form the root of their higher inspiration. Children should play just as much by themselves as in company. They should have their nooks, and be observed without knowing it. If possible, they should prepare their own nooks, with little or no assistance. Aunt Emma told of her own childhood, with her sisters

and brothers and little friends ; in having them twice on the top of the wood-shed and over a stable to be reached by a ladder ; where all phases of life found, as far as known, a dramatized echo.

At the first place, they had the assistance of a male servant, and Robinson Crusoe adventures were reproduced with wonderful truth and effect. At the other place, when a little older, living with an uncle, a clergyman, reproductions were directed to rural scenes and religious events, appearing in great weddings, baptisms, burials, etc. The persons at the weddings and funerals, sometimes numbering forty of both sexes, were the products of their own ingenuity in body and mind, under the earnest consultation of the aunt's rag-bags.

"The sand tables," said Aunt Emma, "are indispensable for them." The least observed nooks are the best. A barn, a yard, a porch, are preferable in summer. Even the sea-shore should have one. The older children will lead the small ones. Aunt Emma found a boy eight years old who gave his father no peace till he had a large sand table in the garret, and he carried there all the earth he needed from the garden in a small bucket, three flights up-stairs. The mother pitied the boy and wanted him to be helped, but Aunt Emma, knowing the child's nature and its educational wants, strongly opposed, on account of the healthy self-satisfaction it would take away from the child, besides the training of mind and muscle.

IX. THE DOLLS.

One day mamma asked of what we should prefer to talk — of the dolls, or the plants. This aroused quite a little dispute. The girls wanted the dolls, and the boys the plants or the horses and steam cars. That gave mamma something to think so earnestly that she spoke to papa about it. She said, — of course, all in a good joke, — “Now, papa, dear, you always complain that I am not so much interested in steam cars, railroads, house-building, and a hundred other things. Now, do you know how that happens? We make our little girls perfectly contented with the dolls; so much so, that while they are less in the street, they learn never to observe and to be interested in those things mentioned above, as all men develop a great deal of common-sense and general information; while our little girls, by living *for* and with the dolls, arouse only feeling, and their whole interest in life turns in two directions. Now, even if I need any interest in these objects, I need them for *you* and *my boys*. If I could speak as sensibly on house-building, without being a carpenter, as our neighbor does, you would talk with me and with our half-grown boys, and listen to our opinion with delight, instead of going to the neighbors to play cards.” And then papa stopped her from speaking by kissing her ever so many times, but mamma said that was just the way all papas did; nevertheless, *she was right*, while papa replied it had

been always so, and therefore he thought it was *quite "as it should be."* To which mamma said, then she would use the dolls in such a manner that her little girls and boys should learn equally well to think and to feel through them. So she told her little girls to bring the dolls for the next morning.

It was long before the time mamma had fixed for them that the whole little household came with dolls in arms. Even the boys carried some, and the neighbors' children peeped in with their dolls. There was a general giggle of soft, laughing voices, because no one knew what mamma could do with so many dolls, if it was not for a dancing party. But it was not a dancing party at all. Mamma herself had prepared a beautiful little cradle, and in it a tiny little baby. We all were delighted. Mamma asked us what we knew of the babies, and of little cat and dog babies we had seen, and in what they were different from their mammas. So we had lots, and lots of fun; and then mamma told some beautiful stories about the care and love of all mammas, even of the cats and dogs; and when she kissed us each, reminding us that we were all so very, very little, as little once as the little speck in the egg of the chicken she would show us next time, and that she had tried to make us grow to be good and happy,—qualities not to be separated. We all promised to love her dearly and our little baby ever so much, when the postman came with a big letter from Aunt Emma, that she really had for-

gotten the description of Friday, the day in common at her school, and that she had been asked some years ago by a gentleman to give a description in short of the purposes of her circular system, and the method how to apply it in a four-years' course in the kindergarten, and so she was sending it to mamma.

X. FRIDAY, THE DAY IN COMMON.

Just imagine a lofty room, sixty by forty feet in size, with scarlet curtains hanging down to soften into a magic light the bright sun of the day. The vases, filled with fresh flowers, fill the room with sweetness and balm. Prang's flower pictures and those of Villemarin, of Paris, give the first division of the room the name "flower room," while the second is for similar reasons the animal, and the third the man-animal room. The sand table has taken a fresh dress, and glories in an artistically arranged copy of the Golden Gate Park. From thirty to forty beautiful little chairs, with a black-walnut movable table in front, are placed in an oval form, and great pains has been taken to make this form perfect.

The recess — that is, a sound, healthy, free out-door sport, changing with some appropriate out-door games, but on Friday turned into a "clearing-up day in common," in order to keep the garden and the play-grounds in good order — is just over.

A fresh, melodious march leads all, large and small, in the room, and marching once around the circle each one takes his place, while the young students take their seats to be at hand as first, second, and third assistants. Aunt Emma takes her place at one end.

The general programme is "to work in common for each other." From this stand-point each effort is weighed and judged, and has proved an educational success beyond expectation, especially as regards *the very young children*. Long essays on botany and geography are followed with mutual attention by the smallest children, without any other means than a *cultivated moral force*. And *vice versa*, every little story told by a four-year-old little adventurer is respected, and generally encouragingly applauded. While not a sound of disturbance is heard, a glowing, happy expression can be read from each face, young and old. Every extra good result of efforts to perfection is presented to me, and received by a most animating, loving spirit on my part. We FEEL the living with each other. We are all united in a true fructifying educational atmosphere.

A story and the sand table are the gems of the hour, not less the group work by dictation from the third to the seventh and ninth gift, by four children. A short recess, and the *tableaux vivant* — for such it is really — is changed. Groups of from four to six children cluster around the kindergartener, young normal scholars forming small rings in the large one. These young ladies

guidingly assist in the individual work each group has chosen by its free will. This ranges from the making of the crystalline forms to the making of furniture for the doll-house, sewing for the dolls and dressing them. (See Aunt Emma's pattern.) The painting of plaques, the cutting of fruit and flowers in paper derived from the circle; likewise the *inventive* circular paper cutting, and pasting downwards common to all kindergarten occupations, till the modeling for the last three quarters of an hour completes the *spiritualized* practice in social training, namely, one living in all, and all in one.

“ All are but parts of one stupendous whole,
Whose body Nature is, and God the soul,
That changed this all and yet in all the same.”

POPE.

XI. HOW BOTANY IS PLAYED IN THE NURSERY AND KINDERGARTEN.

Dear children, to do anything you must have knowledge, and this knowledge you can only gain, as I have said often before, by loving to find out things. In a kindergarten we think we have the *true* beginning, since we begin first with the objects we *love most*, and which are *nearest* to us, either at home or in our kindergarten.

The dolls, for example, and the kittens, and dogs, and ponies, and the flowers we have in our gardens or in our windows, you would almost think, indeed, to hear us

talk sometimes, that all these objects were equally alive and lovable. But, after all, the children soon feel and find out the differences, and this really is just all we mean by that big word, "unfolding," that you have heard so often.

Like this : one day all the dolls were seated next their little mothers in the kindergarten, while we told some very nice stories, and none of the dolls laughed or clapped their hands, or jumped up from their seats, although they had eyes that could be opened and shut, and heads, arms, and legs that could be moved, and even mouths and squeaky voices. And the question came up, why the dolls should not do like the children, since they looked so much like them. One boy said he thought there was *no* difference, as some dolls had real hair, and real ear-rings, and had to be washed when they were dirty, and could say, "Mamma." And Georgie said, "Yes, dolls were even better than babies, for his little sister could not speak, and had no teeth." Then the children all laughed. A little while afterwards we were singing Froebel's song, beginning, —

"This is the mother so good and dear,
This is the father with hearty cheer," —

and Marion broke out in the midst of the singing with, "Oh! now I know what is the matter with the dolls: they have no grandfathers at all!"

"No," answered Irving, "that is so, and anybody with

fifty cents in his pocket can buy some kind of a doll, but you cannot buy any kind of a little sister with a grandfather."

"No, and you cannot give the little sister away, either," said Alice. And so we found out many differences, but the greatest one, after all, was that the doll had no grandfather, that is, no life, and we all decided that not the cleverest person in the world could make a live doll. The next morning, however, Giles came in, saying that he could make things alive; he only wanted a flower-pot and some earth and some water. The children gathered round, and followed him about to see him do this. He took some tiny packages from his pocket, and putting his finger into one of them he looked around, and said in a loud voice, "This I make alive into a phlox; and this" (taking from another paper) "I make alive into a poppy; and this I make alive into a bean."

So the children all watched him, and did not want to sit down until all these things should be seen alive. This troubled Master Giles very much, and he had to confess he himself was very far from being able to make things alive, and his power did not go further than to supply the earth, and the moisture, and the sun warmth which the seeds needed, and that then some wonderful power inside of them did the rest. But he insisted that his seeds were the mothers of the baby plants which would grow, and that there was hardly any difference between a baby plant and a real baby, because they both grew big-

ger and bigger, and they both ate and drank, and needed to be kept warm, and both had fathers and mothers.

But Arthur thought cat babies and dog babies were more like real babies, because they cried, and moved about, and loved their mammas.

"But still they are very different," remarked Minnie; "babies would not eat living mice like a cat, nor crack bones like a dog."

Willie came in just then, with a handful of "dirt," as he called it, and Rose said that must be washed and made clean for the flowers to eat; and then all wanted to know how the flowers could eat dirt, and still be so clean and sweet. And Giles said he had seen a pig eating dirt, and pigs were quite clean, for they were put on the breakfast-table for us to eat.

And in this way we learned a great deal from day to day; that is, each one found out for himself. And since I know that what was learned in this way the children never forgot,—besides having so very much pleasure while they were learning,—I have wanted you to have similar pleasure in your own experiences, and have prepared these books just to help you to use and enjoy what may easily come into your every-day life. By studying plants and comparing them with other forms of life, you will find out a thousand things of interest you would otherwise miss. Suppose, for instance, you thought about the ways in which plants resemble yourselves; for do you not always find yourselves more ready to like those

things or persons who have qualities in common with you? Well, have you ever thought about how the flowers are like your lustrous brown or golden heads and shining eyes? Think of pansies, and how they remind you of bright, laughing, baby faces; think how plants love the sun and stretch themselves toward it, just as you stretch out your hands toward the nice, warm fire; how they feel the cold, too, and suffer just as you suffer if you throw off the bedclothes when you are asleep, on a cold night; and they get hungry and thirsty, and grow thin and pale and drooping, if they are starved. They are willing to work for a living, like industrious boys and girls, but being obliged to stay in the spot where they are planted, they must be able to find what they need not too far from them, though they will sometimes dig a great distance down in the ground hunting for water.

They are able, like you, to bear long journeys, too, if some kind person will see that they are fed on the way. Plants whose home is in Africa have moved to this country and settled down to bring up large families of children, although they are frequently homesick for their own hot native land, and so are a little weaker and less beautiful than at home. But, on the other hand, some plants have emigrated from Switzerland and from England, and they seem to love America dearly, and to thrive most lustily here. You know some people have careful histories kept in their families of their grandfathers and grandmothers, on both sides; and just so

gardeners have done for some families of plants, and they can trace their ancestry very far back, and know just what improvements have been made. For there, again, they are like you! They can improve very much by having the proper care and education. Look at the poppy. From a simple wild flower with four petals, it has changed by means of men's care until it is a full, round, snowy ball, as big as your fist. And so with the sweet-brier or wild rose. Just try to count the hundreds and hundreds of different kinds of roses that have sprung from that wayside wildling. And the little thin-skinned lime, would you believe it to be the mother of the great, odorous, oily, juicy lemon and orange, which add so much to the agreeableness of your life? Then, again, to return to their likeness to you: does not the morning-glory, like some girls, draw its hood close when the sun gets too hot? And speaking of the morning-glory reminds me of climbing, and that is another likeness. The ivy climbs with its hands, we may say, for it puts out little fingers, and catches hold and climbs higher, just like a boy. Then what is it you do at night when you can no longer play or work? You sleep. So do the plants, and, like you, they grow fastest while they are asleep; for then their blood, which runs all about through their veins just as yours does, — only we call it "sap" in them, — is very busy building up their bodies, and so using up the food which was taken in through the day. Not that all plants go to sleep at the same hour and

wake at the same hour. No; but they have regular habits of sleeping, nevertheless. For instance, the flowers of one family have a habit of shutting up their petals at four o'clock in the afternoon, and opening them again at four the next morning, and they never have to be told about it. Others are like owls or the editors of morning papers, they sleep through the day and wake at the same time every evening; and so on, each kind keeping the family habit through centuries.

Another resemblance to the human family I will mention. All little children have papas and mammas, you know, and so have all flower babies. It is true, these vegetable parents usually resemble each other more exactly than human papas and mammas do, but sometimes they are even more different from each other in appearance than are your own dear papa and mamma. Sometimes, indeed, the flower papa lives on an entirely separate tree, or bush, from the flower mamma, as in the date-palm and others; but when he does, he is always sending her love messages and gifts by the birds and the bees. There is one curious tree which grows in Mexico and the West Indies, and of which I give you a picture on page 1 of Aunt Emma's Drawing-Book No. 5.

Here is the whole family on one tree, — both parents and a dozen or so of children, — but the flower papa does not look the least in the world like the flower mamma. He is a tall, soldierly looking fellow, and she a flat little rosy thing.

The most wonderful thing, though — yes, I must tell you about that! — the most wonderful thing is about the cradles of the babies — that is, the seeds, of course — and the arrangement by which they are sent away when they are old enough to leave home and begin life for themselves. On the branch in the picture you will notice, besides the military papa and the daisy-like mamma, an odd-looking, deeply fluted fruit, a little more than two inches in diameter, flat like a cympling squash, and very green. This, my dear children, is a bundle of cradles. Each one of the deep scallops forms a complete little box, — I call it a cradle, — and each cradle holds a seed; *we* call it a plant baby. Think of a dozen cradles, sometimes a dozen and a half, fitted together in that way! Well, when the seeds are ripe, what do you suppose happens? You would expect, perhaps, to see the outside and inside walls of the little boxes get thin and dry and brittle and crumble away as you have seen seed-pods do so often, and the seeds fall out. Not a bit of it. Everything looks just as usual, when suddenly one day, if you should be near, you would hear a loud crackling noise, like a rifle-shot, and you would see this fluted fruit burst all to pieces, each one of the little cradles flying in a different direction with the seeds still in it.

These are not the only plants that have queer fashions of sending the young ones out to be independent, but of the others we shall speak later. Meantime I

want you to know that, like human papas, all the flower papas have a way of sending gifts to the mammas. Not just gold wedding rings, but something like gold dust, nevertheless, and more lovely than gold this shining powder is which they send, and which has the power of making the baby plants grow. Wonderful, too, is the way they often accomplish the delivery of these presents. Sometimes it is a honey-bee that is their messenger, or a bumble-bee that loads up his fat thighs with the yellow powder, and flies away to the other flower with it; or a humming-bird poking a friendly nose into other people's business, and being asked to carry a gift. Sometimes the wind, that never seems to get tired carrying all manner of things, gladly undertakes the errand. But whatever does it, you may be sure it is a part of God's plan for getting it done.

Like you, again, the plants find it necessary to breathe, only you will find their *way* of breathing is not like yours, but like that of the insects. How is that, now?

Then they have skins, too, and will bleed when they are cut. And although their food is generally unlike yours, indeed, is made up of the different salts and minerals which you could not eat at all, unless the plants ate them first and digested them for you, still, some plants eat meat! Yes, you may open your eyes, but plants do eat, not only flies and bugs, even fishes, which they catch for themselves in cunning traps they

set, or by means of a sticky fly-paper sort of an arrangement, but they have even been known to eat fish and beefsteak! Of these singular flowers I will tell you their names, and give you the pictures in the book on flowers. Just now we must find some more resemblances between the plants and yourselves. For instance, they have different ways of being beautiful; some have the beauty of strength, some of form, some of color, and some seem beautiful only because they are so good and helpful.

And like human people, what differences of beautiful dresses they have, too! Have you ever watched from the beginning what goes on between the two leaves which form the dressing-room, or shall we not call it the crib-curtain, since the blossom is such a wee thing when it begins to make its toilet? Some morning the curtains part, or fall down, and there stands the lovely thing beautifully robed in pink or purple or blue or scarlet, or any one of a hundred tints, even with two or three together. And so very particular they are, too, about the cut of their gowns, these flowers! Some must have them only in one piece, some in two pieces, some in three, and others in four, and five, and so on up, until some, like Miss Daisy, have as many as a hundred pieces in their frocks. And each particular cut has a very particular name, a great long name, too, which is put down and described in books as carefully as ladies' dresses are in the fashion papers. And how

differently they wear their dresses! Some in long sweeping robes, trimmed, perhaps, with a velvet stripe; and some in short, coquettish, overlapping skirts; some with points, and others with fringes or scallops, or the richest embroidery, but no two exactly alike, even though they may be twin sisters. In one thing, however, they all follow one fashion, and that is in having either a yellow button or some yellow strings in that part of the dress that is fastened to the stem. But don't imagine the only use of these yellow strings, or pins, or buttons, is to fasten the dress in at the waist. Oh, dear, no! They have the most important and wonderful duty, and that is something I very much wish you to find out, for I am sure you will find it more interesting than any Christmas story.

But as I said before, plants are like you in being able not only to help themselves, but to help others. *Think* of their usefulness! though you can never get to the end of it by thinking of it. Leaving out, now, those which are so serviceable for food, for clothing, for making dye-stuffs, for building, for art, just take one glimpse at their uses to the sick. It is believed very earnestly by many that in every country or part of the country where a particular kind of disease exists, there grows a plant which will heal that disease. It is certain, at any rate, that if there were only a thimbleful of seed left of such a plant, the biggest diamond there is in the world could not buy that seed. Many of these

healing plants are poisonous, it is true; but after all, a poison, like many other apparently bad things, is only bad when it is in the wrong place. Fire is very bad when it burns you or your house, but it is very good and enjoyable when it warms you and cooks your food, and makes splendid illuminations on the Fourth of July.

Perhaps we have now made comparisons enough, and as to the food plants and their usefulness, I think you can tell me almost, if not quite, as much as I can tell you. From the fields, if you live in the country, or from the markets and your own tables in town, you can cull a score of examples of the utmost usefulness, even if you left out the fruits so much loved by all, because we carry them to our sick friends to give them pleasure.

But now, if we are ready, let us get to work. I suppose you will say getting ready is a part of the work, and you are right. What we have been doing, then, in stirring the soil of your minds to receive the seeds of thought, and in warming your hearts that the germs of knowledge may swell and grow, is just what the gardener does in the spring; more than that, your eyes have been opened and your fingers trained, and your color sense improved by the circles and colors and flower-like forms of Book No. 1, and now you shall be promoted to study, and handle, and picture the forms of life.

We are now about to enter the fruit kingdom. You will remember we crowned the bread-fruit king of

fruits, and he reigns over a kingdom whose plenty and delightsomeness we can hardly find words to express.

Well, how shall we study them? Not in books or in hearing. Some one talk of them? No, indeed; as far as possible, let us make the acquaintance of each fruit by itself, beginning with that tiny speck called the germ, watching it sprout, watching how and when it blooms, whether the leaves come first, or the blossoms come first, noticing how long it takes the fruit to ripen, what color it has, whether we eat it green or ripe, and everything else of interest about it. And when you are fully acquainted with it, then you want to make a portrait of it in many different ways. You will have noticed a picture of a rubber ball on page 1. I want each one of you to have a soft hollow ball like this pictured one, made on purpose. On the next page you see the gourd, which is only a live ball, pictured in three ways; first in black, then in its natural color, and third as it looks when cut open, and showing the seeds surrounded by their spare food.

Below this you see empty circles. In the empty circles on each page you are, of course, to copy the drawings you see in the upper circles, but you will be sure to want more room; you will so eagerly find out for yourselves other growths akin to these, which have the same inner arrangement, the same way of having the seeds taken care of inside the protecting body of the mamma fruit, where, like the chick in the egg, they

find food and drink until they can do for themselves. Taking the gourd family, for instance, with its cousins and its aunts, the cucumbers, melons, etc.

Well, to provide for your independent discovery and drawing, I have caused stubs or little ends of leaves to be placed in these drawing-books, and your interest and industry will be proved by the number of leaves you paste in here containing pictures of fruits, for which you have no model in the book. As to the pages in which you find a picture, and of which I present you several in each book, you are to use them just as you like. You may draw them as they are represented, without circles, or you may arrange the whole according to your fancy, and construct pictures as you like them.

Another thing, you already know by experience how numerous is the peach family and the apple family, and so on. Now a great pleasure and advantage will come to you if you will have a little book in which to write down the name, the habits, the taste, color, season of ripening, and special qualities of each of these fruits as fast as you can find out about them. I do not mean those fruits only, but I have named them because I know you will be so surprised to find what an immense variety there is of these.

And now to go back to our studies. The gourd family, with which you began, is quite large, too, and I trust you will inquire very carefully into the family

relations, for it is an interesting group. I myself have just seen some very curious cousins of the gourd family from Russia and from Japan. You will recognize the kinship by the similarity of the leaf forms, by the flowers, and by their manner of growth, although the surface, flesh, shape, and color of the fruit differ greatly in different varieties. These likenesses and differences are just what I want you to observe and describe, and to add to them any new quality that you perceive. This is what we do in the kindergarten, and you cannot imagine the pleasure it gives us. It brings together the older and younger little playmates, and I assure you it is not greater age that succeeds best; it is rather the quickness of the sparkling little eyes wide open to see everything, the warmth of the little heart ready to love every beautiful object, and to hold on to the memory of it by associating one thing with another.

Should you not like to have me give you the history of one of those happy hours? It may help you to see how best to draw out this knowledge of the fruit.

Several of the children are out of their seats. One little boy holds the rubber ball, whose pictures you have on page 1, a little girl holds a gourd, and a little boy named Isadore stands ready, chalk in hand, to draw something on the black-board, the rest of the children having their slates, rubber balls, and gourds, waiting to draw, to describe, and compare.

Prescott begins his story : "The rubber ball I have in my hand is like the gourd ; it is round."

Just here, Lester, who is something of a martinet, says : "May I tell that he forgot to speak of the general qualities which belong to the ball and all other objects? That is, that it has shape, color, surface, weight, the power of taking up space, and gravitation." This order of things being Lester's hobby, we all laugh, and then Prescott goes on : "The ball has also special qualities in which it is like the gourd ; that is, they are —

"Alike, in shape : both round.

"Alike, in having no corners or edges.

"Alike, in both moving easily on account of standing on so small a space." And here Minnie breaks in with : "Yes, indeed, and that is why they both run so fast, and why it is hard to stop them. So very different from Mr. Cylinder, who can't roll fast because he rolls so much of his body on the ground ; and not a bit like Mr. Cube, who can't roll at all, but just sits down and takes up as much space as ever he can cover, and when he turns over, and that is n't easy, he gets another big place to stay in, and so he stops, and thinks he would rather rest ; but Mrs. Sphere runs round him ten times while he is turning over." And we all played with these so-much loved members of the family, namely, Mrs. Sphere, Mr. Cube, and their son, Master Cylinder, and had a most jolly time. Then we proceeded a few days after : —

"Unlike, in color: one gray, the other yellow," said Mag.

"Unlike: the ball made by man, the gourd made by God," said Edith.

Unlike: the ball soft, the gourd hard.

Up speaks Irving: "The ball can be pressed into deep hollows and it jumps up again, but if you try to make a hollow in a gourd, it breaks in pieces." "If you save the pieces," says Marion, "you can glue them together, but it will never roll so well again."

"The ball always stays the same size," goes on Prescott, "but the gourd gets bigger and bigger from a little speck as big as a pinhead until it gets ripe enough to turn yellow, and then it does not grow any more."

"Yes," calls out Mamie, "and that part of it as big as a pinhead is a tiny green knob just at the bottom of the flower, and it keeps on getting larger and the flower getting limp and dry until after a while the flower is all gone. I saw one blooming in our garden last year." This brought up a long talk on the likenesses and differences of the cucumber or gourd flower and the cabbage flower; the first were described as being in the shape of a funnel, and the last like a star. After that, Isadore went on to say that the ball was unlike the gourd, because it could not start to run without being pushed, while the gourd not only runs and runs of itself, but fastens itself by its vine and climbs up trees, and over fences, and gets into other people's grounds. Unlike,

because the ball cannot be eaten at all, while many of the gourd family are very nice to eat for man and animals. "We never eat gourds," said Jessie, a little mite from Kentucky; "but we make ours grow with crooked long necks, and then they cut out a big hole in the side, and then they have a nice water-dipper."

At this, all children turned astonished eyes on Jessie, and Giles said, "You can't *make* a gourd grow with a long neck unless it is a long-necked kind of gourd"; while Minnie, who was thinking of the first part of what Jessie said, turned towards her with, "Nobody eats gourds, but a pumpkin is a kind of gourd for a cow, and I am sure you would eat a squash pie." Then Willie said, —

"The ball is unlike in being made of rubber, and rubber is made of the gum of a tree, while the gourd is made of the different things that it feeds itself with out of the earth and the air, just as we are made of what we eat."

By this time, the clock held its longest finger straight up, to show us that our time was past; and although I have not told you half that we said, nor how many nice round pictures of balls and gourds the little ones had meanwhile made on their slates, Isadore making his on the black-board, comparing and admiring each other's work, still I have told you enough, and we all looked forward with great interest to the next talk about the gourd, for we had decided to have it cut open, and find out all about its seeds, and how they were tucked in and

nourished by their mother. Susie now stood up and repeated this little rhyme about the gourd : —

Roll, roll, roll,
I am a rolling ball ;
I am a golden fairy tale ;
My skin is hard, my flesh is soft,
I have no head, nor hand, nor foot.
Run, run, run,
I am as round as the sun.

Afterwards Cleone said, about the orange : —

Five little petals white
Around a crown of gold,
Fastened in a little cup
Full of sweet and odor.
“ Come, little bee, oh, drink of me ! ”
“ Come, little bird, oh, smell of me ! ”
Five little petals white
Around a crown of gold,
And the wind blew the five little petals off,
And with it, the crown of gold.
But the sweetness was kept in the little cup,
And grew in a ball of gold.

Then Lester said, about the melon : —

Run, run, run,
I am as round as the sun ;
My mother kissed me from my sleep,
I stretched my arms to catch her light.
I dress in green, I bloom in gold.
Run, run, run,
I am as round as the sun.

O apple on the apple-tree,
I wish to be like thee, —

So sweet your flesh,
Your color so fresh,
Your face so smooth,
Your taste so good.
O apple on the apple-tree,
I wish to be like thee.

On the second page you have the picture of a perfect living ball, or gourd. You have drawn or sewed the regular outlines of the gourd, in which you placed the forms of peaches, oranges, and potatoes, and yet how different it looks here! What you made, looked more like a flat slice of a gourd, but in this picture it looks so full, as if it stood out from the page. This effect is brought about simply by knowing how to put the little fine lines heavier in one place than another, which is called shading. From the gourd you will go on to other forms of life, finding the greater pleasure if you study the living things, even while you are copying the pictures I gave you in the book. For, by studying the living things, dear children, you learn more things than their life history and appearance. You learn how the most perfect seed will not bring a perfect plant unless the right kind of care is given the tender growth, and how the least little neglect may be enough to spoil and ruin a young plant that might have borne beautiful flowers and fruit. And you have already seen that you learn how you are like a plant. For you are, after all, only a human flower in the great garden of humanity, and but for the care your dear parents give you, you, too,

would wither and die like a neglected plant. But you can do what the plant cannot. You can help yourself TO BE and TO GROW what your loving friends desire, and if YOU do not help, then all their care will be lost. Let these drawing-books speak in your favor. Let them prove that you understand how all this loving care of friends and teachers is bestowed on you, that you may be straight and strong and beautiful in body and soul, and that you may be best able to realize the great happiness of being serviceable.

Passing on now, you will see on the page next after the gourd a melon, and the gourd and the melon have a great many relatives in the vegetable kingdom whom you will only get acquainted with by noticing how they are arranged inside as to seeds, pulp, etc. In fact, it is by the "inner construction," as we call this sort of thing, that we are often able to trace the kinship of plants when the outside looks puzzle us. If you judged by the outside appearance only, you would make the most comical mistakes in trying to invite some family of the plant kingdom to a Thanksgiving dinner. The only certain way to group them together, when other tests fail, is to do it as God will judge us all some day, — by the heart. For instance, to talk a little in advance of some of the fruits whose acquaintance you are about to make; here comes a beautifully delicate smooth-faced oval, who says to the door-keeper where the Thanksgiving reunion is to held, "My grandfather was Baron

Peach, and I want to sit with the Peaches." Not at all, madam; your complexion and skin put you on the Plum side of the table." But the fruit-gardener, who presides, says, "Mrs. Nectarine is right as to where she belongs; she looks like a plum, but she has the rough-pitted seed of the peach." Comes pale Miss Apricot, with downy, peachy cheek: "I, too, belong to the Peach side of the family, and must be seated among them." "No," decides the fruit-gardener, as the door-keeper is about to yield; "Miss Apricot belongs indeed to the family, but her smooth, unwrinkled heart puts her with the Plum branch of it." And then a foreign cousin arrives at the door; a swarthy, handsome creature whom nobody knows, and it is whispered, she comes from San Domingo. Well, where shall she sit? She is as purple as a plum and as downy as a peach; but the stone is divided in three parts. "Put her with the Plums," says the fruit-gardener, who knows her heart.

A week is a long time to wait for a looked-for pleasure, but Monday morning came at last, and with it the opening of the gourd. Unfortunately, by traveling in the summer heat, it had lost some of the juiciness of its fleshy inside, such as you find in the melon, and was reduced to a mere brownish gray substance.

The similarities of the whole gourd and the half one were very few, much to our regret. We found in their special qualities they were—

- Alike :
1. Both being named gourd.
 2. Both fruits of the same kind.
 3. Same shape.
 4. Same color.
- Unlike :
1. In size ; one being a whole gourd, the other only half of one.
 2. In weight.
 3. In taking space.
 4. In the whole gourd being without beginning or end, while the half is like a little dish filled with gray stuff, but dry, not juicy like the cucumber and melon.

"I know," said Susie, "they are made of gray threads fastened to the sides of the dish like tiny hammocks, and the seeds look like little fishes in the hammocks."

"Yes," Georgie breaks in, eagerly ; "and don't you see, the hammocks are fastened so evenly, just on the places where the darker stripes are on the outside of the gourd? But not threads, Susie. Don't you remember the fibers in the Ramie plant Gerry had in his garden, and how we tried to feed them to the silk-worms we were raising, because the fibers you call threads were so silky?"

"I remember ! and the long fibers, too, we took from the bark of the willow-tree, and Archie and Willie made little flutes of them."

"But the best fibers of all," said Mamie, "fibers as

strong as linen thread, were those of the New Zealand flax. You know how we used to cut them off near the ground, and tie up things with them?"

"Yes, we used that for strong strings," said Anna, "and they looked just like big grass, only they had blossoms, and they kept their little black seed babies in pods like peas. I wish all children could see these pods, they are so beautiful."

"But we have forgotten the gourd," exclaimed Earl. "If it were only fresh," said he ruefully. Upon that we decided that one of the older children, in the primary department, might write a nice letter addressed to the public school at Los Angeles, and asking that some of the children there should send by mail a few of these gourds, which, at Los Angeles, grow like weeds, and lie in the roads in great numbers when the vines have dried up and broken off.

And now let us, for a few moments, compare the gourd and the peach; not the whole gourd and the whole peach, which, however you must not fail to do, but (in order that we may finish at once this little descriptive talk) the half gourd and the half peach.

At first, some of the children said they were not alike in anything; but, looking more carefully, we found that they were alike in many special qualities, as:—

Alike: 1. Both come from a plant.

2. Both are fruits.

3. Both grow from small to big.
4. Both have skins.
5. Both take food from the ground.
6. Both carry their seeds in the middle of the body, and have something all round the seeds for them to eat when they first begin to grow.
7. Both round. But to this there were objections. Prescott said they were round like a ball on one side, and flat like a cylinder on the other. But Marion remarked that a cylinder was quite flat, while the flat part of the half gourd was somewhat hollow, and of the half peach was very bulging in the middle where the seed was.

Then we found, by looking and talking further, that they were—

- Unlike :
1. In shape, because the gourd was perfectly circular, while the peach had quite a little hollow place at the end where the stem was.
 2. In color : the gourd yellow, the peach yellow, red, and green.
 3. In the way the inside was made : the gourd having strings or fibers which did not fill it up full, and the peach being quite full

of rich juice and meat in the tiny holes all through it.

“Only we do not call them holes any more,” observes our manly Earl, with all the importance of his five years. “They are cells, like the cells in the honey-comb, only we cannot see the cell walls of the peach, without the magnifying-glass.”

This immediately brought out a stream of information about cells which they had examined with the magnifying-glass and without it.

4. The gourd cannot be eaten; the peach is delightful food, and we carry them to the sick children in the little children's hospital.
5. The gourd has no taste; the peach has a delicious taste of sweet and sour together. Papa likes them very much.
6. The skin of the gourd cannot be peeled off; that of the peach can.
7. The gourd has a large number of seeds; the peach but one.
8. The gourd seeds can be easily broken; the peach seed cannot.
9. The gourd grows on a running vine; the peach on a tree.
10. The gourd has yellow flowers coming after

the leaves are out; the peach has pink flowers coming before the leaves.

11. The gourd has to be planted anew every year; the peach bears fruit for many years on the same tree.

Of course, you will easily understand that all these talks and discoveries do not belong to one lesson. On the contrary, what I have told you is the outcome of many hours of observation and enjoyment. Each child had to handle and study and compare each object under consideration, and to find out for himself, and then to model and draw it, and finally to put down in a book what he had found out. At least, that was what the older children did with great pleasure; and so I should advise each of you to have a book quite separate from your drawing, and to write down in it all the discoveries you make about the objects whose pictures you afterwards draw. Another thing that went into this book I must tell you before going on: the children asked each other questions, and the answers to those questions were brought back the next time, written down, and then each child had something to add to the store of knowledge which he was gathering and putting into the leaves of his precious little book; such questions as these, for example:—

1. In what five ways are plants and human beings alike?

2. In what five ways are they unlike?
3. What is the name of that part of the plant which gets food and drink from the ground?
4. Are these parts of the same size and shape in all plants?
5. What is the name of the other part of the plant which grows out from the seed, and which likes to grow above ground?
6. Does this part that grows above ground have the same way of growing in all plants?

These are some of the questions only, and I give them to you just as hints of how to go on, and I will close this talk with you by giving you a few more hints.

Find out all that you can about each of the fruits whose picture you have on your cards, or which you draw.

For instance, state which fruits have blossoms before the leaves come out, and which ones get the leaves before the blossoms.

Tell all you can about the kinds of blossoms and leaves, seeds and bark, of the different fruit trees.

One of the most interesting branches of such a study is the collection of pieces of the wood of the several fruit trees. Some of the children had beautiful collections, and were fortunate enough to find some one to polish the bits of wood, so that the color and grain of the orange, the cherry, the chestnut, and so on, were brought out in all their variety and beauty.

Find out about the snug, tiny brown blankets in which Mamma Nature keeps her baby leaf-buds and baby flower-buds rolled up warm all winter, and try to see with your own eyes some of these buds waking up and shaking off the blankets in the early spring.

State how long a time passes between the blossoming and the ripening of any two fruits you choose to compare, — say the cherry and the apple. Tell the name of the fruit you have noticed ripening first in the season, and also of that which ripened latest of all, and tell the day and the month when you observed it.

Tell how many different colors you have seen in fruits.

And now, if I thought this were to be the last word I should write for you, — and I hope it will not be by many, many more, — I should say, be eager to get acquainted with nature; love the grass, and the wheat, and the flowers, and the trees. Go out into the fields and woods with your brothers and sisters and playmates, whenever you can, not *to fish*, or *to shoot*, or *to rob birds' nests*, or *to bring terror and pain to any living creature*, but to learn the looks and the ways of growing things, and to help each other to see and to do things that one alone might not be able to do; and if you follow after these things that I have shown you, I am very sure you will be happy.



XII. A PROGRAMME AND THE METHOD OF DEVELOPMENT USED AT E. MARWEDEL'S KINDERGARTEN AND SCHOOL.

The demand to impress our children very early with the beauty and the laws laid open in Natural Science rests not exclusively on the gaining of practical knowledge, but rather on the moral and mental efforts it exercises. Concentration of thought, comparing causes and effect as a natural outgrowth of disciplined powers, develop strength of character and self-limitation necessary for man to consider himself a responsible part to the whole, respecting the created in the Creator, which, *from searching the truth*, centers in the *thinking* and *living* in truth. On this earliest conception of the truth and beauty of *nature*, and the needed truth of man to *nature*, Fried. Froebel, supplemented by W. Preyer, bases his necessary reform of early education. He holds that on account of its simple form, presenting a unit, its attractiveness, and its fundamental connection with all forms, the ball relates itself typically with all forms in nature.

Therefore, presenting in its great simplicity the greatest manifoldness, Froebel selected the ball, to serve as the basis for an extensive series of visible impressions by self-experience.

On this ground, Emma Marwedel, from San Francisco, Cal., has based her so-called Circular Drawing System (exhibited at Madison, Wis., 1884).

Her aim *was*, and *is*, to illustrate by actual work of her pupils a methodically arranged curriculum of experimental and analytical observations on objects pertaining to nature. Embracing a four years' *logically connected course*, the child of the kindergarten steps in the so-called flower-room, or the first group of impressions abstracted from the *simple*, therefore, *most comprehensible* form, — the ball, the *undivided* whole, as the typical form of all forms.

The child's perception is fostered by surrounding pictures, gained from the care and observation of plant life in its own garden, by the ball in general and a rubber ball in special, — the latter prepared on purpose.

This perception is directed to conceive shape, color, position, direction, size, and number, by the so-called CIRCULAR SEWING, *invented* by *Emma Marwedel*, leading from the simple ball-like ring or flat circle to the fruit, vegetables, leaves, flowers, and roots; also by a variety of plays, stories, and manipulations WITH and observations ON "increasing and decreasing," *similarities* and *dissimilarities*, to an *individual* conception of the existence of the circular form presented in all rounded objects of nature.

Furthermore, by means of manual labor, *skill* and *eye-measure*, the child learns to *use* and to *dissect* the circle as its standard of comparative measurement for reproducing fruit, vegetables, and flowers, according to free individual conceptions, finally directed to analysis and

classification. For this purpose, sand, the slate, paper, clay, wood carving, pasteboard making, paper cutting, and drawing are used.

No true kindergartener denies the possibility of bringing the process of growth—one of the greatest phenomena of life, in its gradual development OF and its philosophical connection WITH all things—into the reach of the experience of even the smallest child. Does not the growth of a simple daisy, planted and watched by tiny little hands and eyes in its own garden, tell the little three or four year old one, in the most beautiful unspoken language, of its own flower-like existence, and of that of its little kitty, which was so small first that it could have a perfect little cradle when she put her two hands together? Must dear Alice not bring a drink as well to her flowers as to the kitty; and has she not seen herself that the beautiful blue morning-glory went to sleep like little kitty at night? And how much kitty enjoys the sunshine; and Rosie and Marion were told by their mammas, that the flowers wanted ever so much sunshine. To which Giles replied, "Minnie's kitty was not the only one that lived like a flower; he wanted a drink very often, and he slept well, too, and when on the sea-shore he was lying all day in the sun." But then Irving said, "But he could not swim like a fish, and he could not stand with his feet in the ground like a flower." But Giles said, "When he was big he could swim like a fish, and he would soon be shaved. And

the other day, when they played in the sand, they dug a hole, and he was standing in it and he did not fall over."

But Lawrence said, no one could grow as big as a pumpkin; to which Willie replied, he preferred a carrot after all; he would take it out of his own garden, and first draw it, then eat it, and that made two carrots.

With this experimental philosophy of babyhood, the child grows unconsciously into the larger and more complicated aggregation of animal life and general qualities of objects. As the flower has color and shape, has a surface, some call it skin, takes space, or needs place to stand on, has weight, especially when it is a big sunflower in which one can see ever so many pieces when it is cut (cohesion), and which has, after all, to lie down somewhere, because it cannot fly around forever (gravitation); so the animals are in many things like the flowers, and other things besides the flowers and animals. Not a bit of difference, only animals can move about; to which Lester says, they cannot always; some animals are fastened to the rock. Sap becomes a synonym for blood, veins for veins, midribs for backbones, flesh for fibers. Hairs grow on some plants, on the skin of animals and man, and even they burn. Some plants have monkey tails to fasten themselves on trees; some tails grow in the ground. Some plants have thorns like a porcupine; some flowers climb up like a cat; others open their own pitchers to take in water, and all flowers

wear dresses like the animals. Some wear the dress of a tiger, and they are called tiger lilies. And Irving, turning on his heels, his arms stretched, calls out with great emphasis, "And everything must have its height, even the spider-web; this I know, having seen some in the garden on my flowers, and they were very beautiful and large." "Of course," said Prescott, "and there is an outside and inside of everything; perfectly smooth on the wooden balls, and rough on worsted balls; we all knew that long time ago, when we played 'finding different surfaces.'" "But please let me tell you something else about balls," said Meade; "we had some, they were of wood, some of brass, of marble, iron, glass, pasteboard, and sometimes Aunt Emma put an apple or a round potato in, and do you remember once a piece of dough? for remember we were blindfolded, and we took two of these things, *one* in each hand, and told what we *felt most*, and that we called the heaviest, that means most weight. Other days we played 'the most,' or '*what was the most*,' and that we called *size*." "May I say something?" said Marion. "Do you know that piece of dough, how much fun we had with it? how we made it long, and wide, and afterwards smaller and smaller, and how Robert Whitney guarded it, saying, 'I make it tighter and tighter, till it will be the tightest.' Oscar took a piece, and he first made a square, then an oblong, and then in triangles, and it was always the same in weight, neither less nor more; some used a queer word for it, calling

it the same contents' through changed in form. In recess, Aunt Emma made a baby of it, and we all cut some paper dresses for it ; that was great fun."

With this free and childish natural power of comparative conclusion, and individual conception, the outgrowth of every normally conditioned and normally treated child, what remains to the responsible leader of childhood than to *retain* its self-activity, helping it to think for itself; developing its own conception of life as it did when for the first time it knelt down in prayer, before the opening of the first daisy, which it planted with its own hand?

A new light dawns in the so-called "New Education." Man begins to submit to the use of the activity of the natural powers of the senses and the observing faculties of the child, by merely following the individual bent of its nature. Our need is to create the *educational atmosphere, the justly regulated conditions.*

The earliest introduction into the beauty and science of nature, the method of "knowing by doing" and the free use of the creative forces, have been recognized as the elements of such *justly regulated condition* of the child. The following programme has served to this end, a description of which has been kindly demanded.

EMMA MARWEDEL'S KINDERGARTEN AND SCHOOL FOR
PHYSICAL, MENTAL, AND MORAL CULTURE, SAN FRAN-
CISCO, CAL.

EDUCATIONAL DEVELOPING IMPRESSIONS THROUGH THE SENSES
STRENGTHENED BY SELF-ACTIVITY RETAINED BY FREE REPRO-
DUCTION OF THE CHILD.

FIRST DIVISION.

FLOWER ROOM (*Prang's Flower Chart*). — Introducing the curve.

A. THROUGH THE BALL, *in which the child observes* (sees).

COLOR AND SHAPE. — General and special attributes of all objects.

Feels (touches).

WEIGHT AND SURFACE. — General and special attributes of all ob-
jects.

Experiences (by use).

MOTION, DIRECTION, POSITION, SIZE, SPACE. — General and special
attributes of all objects, leading to the conception of cohesion and
gravitation.

B. THROUGH THE DOLL, *representing the child's own body; introducing
comparison between child's life, doll's life, and home life, morally,
intellectually, and socially, the making of a doll-house, paper dolls,
and sand table, as much as possible in* COMMON.

C. THROUGH THE BODY AND HOME, *introducing observation and com-
parison.*

Child has a body.

So has the doll.

Child has a home.

So has the doll.

Child has a mother.

Doll has *no* mother, no father, no
sister; *no* love of them, *no* du-
ties to them.

Happy little beloved child in a
happy home.

Poor doll!!

D. THROUGH PLANT LIFE AND CARE, introducing, through self-observation, *comparison and conclusion*, and *moral judgment*.

Plant grows. } Child grows. }	What does the doll do?
Plant needs food. } Child needs food. } Plant needs care. }	What does the doll need?
How does the plant grow?	Does the child need nothing more than food and care?
How does the animal grow?	What do animals and plants need?
How does the child grow?	Has the child no higher aims than to grow?

Similarity of the growth of children to that of baby seeds in plants. (See "Aunt Emma's Botany," connected with "Childhood's Poetry and Studies in the Life and Form of Nature.")

E. REPRODUCTION OF THE IMPRESSIONS MADE.

Through forms pressed in sand.	Images of that which exists and is seen.
Through combinations of flower-like forms and parts.	Symmetrical circular forms, either dictated or created.
Through drawing on slates or paper, with black and colored pencils.	Reproduction of nature and free inventions in paper cutting and clay.

All impressions have to be enlivened, so that they shall not be forgotten, by songs, plays, stories, daily gymnastics, breathing and vocalizing exercises, and gardening. A few of Froebel's occupations.

SECOND DIVISION.

Using the same underlying principles and means of developing as in Division I.

ANIMAL ROOM (*Prang's Charts*). — Introducing cylindrical forms.

- | | |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------|
| A. CHILD'S BODY; | <i>its parts and functions.</i> |
| B. PLANT'S BODY; | <i>its parts and functions.</i> |
| C. ANIMAL'S BODY; | <i>its parts and functions.</i> |
| D. INTRODUCTION OF THIRD AND
FOURTH GIFT OF FROEBEL. | Leading to comparison, conclusion,
and moral judgment, supplement- |
| E. AUNT EMMA'S CIRCULAR DRAW-
ING-BOOK, NO. I. | ed by the care of animals, raising,
analyzing, and drawing of plants, |
| F. SOME OF FROEBEL'S OCCUPA-
TIONS, INCLUDING SQUARE TAB-
LETS. | cutting in paper and modeling
them. |

THIRD DIVISION.

MAN IN HIS RELATION TO THE USE OF PLANT AND ANIMAL LIFE.

Room filled with Braun Sons' pictures, which offer, by attractive sceneries, a combined instruction in botany, geography, and zoology.

- | | |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. PLANT LIFE. | } Both as made useful to man, lead-
ing to the manufacturing powers
of man and his wisdom as con-
sumer of raw products, including
man's moral and religious obli-
gation, based on the unity of
creation and the Creator. |
| B. ANIMAL LIFE. | |
| C. MAN. | |
| D. HOME GEOGRAPHY. — Measure-
ment of school-garden and city
blocks, excursions to buildings,
factories, and museum. | Sand table, clay, microscopes,
cabinet, gymnastics. |
| E. BOTANY. — Practiced in school-
gardens by drawing, analyzing,
and modeling; also by paper
cutting. | "Aunt Emma's Botany and Cir-
cular Drawing." |

- F. BEGINNING OF WRITING AND READING. — At once used to express original ideas, based on self-help. Arithmetic by objects. Reading and speaking of the English language.
- G. Use of the fifth gift of Froebel, and some of his occupations.

FOURTH DIVISION.

Room filled with Brockhaus Bilder Atlas, Braun's Ancient Historical Pictures; maps, charts of physic, library and cabinet.

- A. The child in his relation to himself, to others, and to God, his creator, morally and intellectually. By work in common, good reading and stories. By the older ones taking care of the younger ones, and by instilling good habits, based on self-control.
- B. Child's relation to its physical and moral, constructive and destructive powers. By reading biographies and elevating poetry. By making a statement of the daily conduct in a book kept for that purpose. General elevation of mind and aims, awakening religious feelings by hymns and words.
- C. Geography, elements of physics and physiology, and ancient history. By map making in relief (for instance, in putty). Map drawing. Physical instruments and Braun's Historical Pictures; also Brockhaus Bilder Atlas.
- D. Geometry and arithmetic. Froebel's seventh gift and Robinson's Second Part of Arithmetic.
- E. Drawing and botany. "Aunt Emma's Botany and Circular Drawing." The raising of plants and modeling them.

F. Reading and writing.

Directed from the beginning to practical use, in reading geography, botany, and poetry; also in writing essays.

G. Bodily exercises.

Back. Bar. Swing.

H. English language.

Practiced by speaking, writing, reading, and dictation.

It is the author's aim to speak in her next volume of the kindergarten, in consideration of "what *it is* and what *it will be*"; also of school-gardens and education through work, in the United States and Europe.

PART II.

The Soul of the Child.

EXTRACTS FROM THE RECORD OF OBSERVATIONS

MADE BY

W. PREYER ON HIS OWN CHILD, FROM BIRTH TO THE AGE
OF THREE YEARS.

TRANSLATOR'S PREFACE.

THE latest, and so far the most exhaustive, scientific investigations of infantile evolution have been made by Prof. W. Preyer, of the chair of Physiology and Psychology in the University at Jena. Three times every day (beginning five minutes after the child was born), for three consecutive years, Preyer made careful observations on his own son; and the remarkable work, entitled "The Soul of the Child," contains the results of these observations. Pending such a translation of this invaluable book as will place the English reader in full possession of it, the following extracts are made, with a view to giving mothers and educators an insight into the natural unfolding of the physical and mental organization of the infant human being. Only such extracts are here given as relate to and illustrate Part I. of this volume, "Conscious Motherhood."

It is earnestly believed that no true mother, once awakened to the possibilities of aiding in the development of her child which those studies of Preyer will suggest, can be content to remain a passive spectator of the successive acts of earliest development. If in every family, experiments and observations similar to those instituted

by Preyer should concentrate the interest and efforts of the thinking members of the family upon the growing infant, the value of such a course, to the individual, to the family, and to science, would be well-nigh immeasurable. The most delightful occupation would fill the many worse than idle hours, — hours now spent in aimless talk or corroding gossip; and the baby, instead of being alternately a toy and a care, would become the center of a thrilling drama.

In translating the following extracts, attention has been given chiefly to Preyer's experiments and conclusions upon the educational value of an early and careful direction of the senses and the emotions.

PREFACE OF PREYER.

SEVERAL years ago, in placing before myself the task of investigating the physiology of the child, both before its birth and in the time immediately succeeding the same (in order to arrive at a conclusion concerning the origin of the individual vital processes), I very soon realized that a division of the work would favor its progress. Since fetal embryonic life is so essentially different from life after the child has left the uterus, a separate presentation of the results of the investigator's labors will be an unmistakable benefit to the reader.

I have, therefore, treated life before birth as a separate subject, under the title "Physiology of the Embryo." Again, the phenomena of the life of a human being, in the first period of its independent existence in the world, are so complex and varied, that here, too, a division of the subject proved desirable. I separated the *physical* development of the new-born and very young *child* from its mental unfolding, and have endeavored to describe the latter in the present volume. I hope, at least, that by means of my own observations for several years, I have contributed actual material for a future description of human unfoldment.

A forerunner of the work, in the shape of a lecture on Psychogenesis, delivered by me in 1880, in Berlin, before the Scientific Association, was published in the same year as my book, "Facts and Problems of Natural Science." This sketch stimulated many others to new observations; and yet, regularly kept journals of the mental development of individual children are unknown to me, great as is the number of occasional observations on many children. And it is exactly the first and second years of life that offer the greatest difficulty in attempting a chronological investigation of mental growth, on account of the nursery being the only place where a daily registration of such experiences can be made. I have, nevertheless, kept a diary from the birth of my son until the end of his third year. As I, with only two trifling interruptions, occupied myself with the child nearly every day at least three times, —morning, mid-day, and evening, —protecting it as much as possible from the customary "training," I found nearly every day some psychogenetic fact to record. The essential contents of this diary are to be found in the following pages.

It is true, one child develops quickly, another slowly. The greatest differences of individuality occur in the children of the same parents, even; but these differences are related much more to period and degrees than to the order of succession of the individual phenomena of development. This *order* is the same in all.

Desirable as it is, however, to collect statistics of the

mental unfolding of many nurslings, — of their sense activity, their movements, and especially their learning to speak, — it seemed still just as desirable to record exact daily observations upon *one* healthy child, which should be neither remarkably forward nor remarkably backward in development, and which should, besides, be without brothers and sisters.

However, I have also tried as much as possible to consider the observations made by others upon other normal children in the first years of life, and have also, whenever opportunity offered, myself made many comparisons of children. But a description of the gradual appearance of brain activity in a child, and the most careful record of the perfecting of his intellectual powers, would, after all, be only a beginning. The spiritual development must, just as in the development of form, be dated far back of the origin of the individual existence.

When we perceive that a new-born child brings with him into the world a number of organs, which, up to this time, have been completely unused, and whose functions begin later on, as, for example, the lungs, useless before birth, the question arises, "To what cause do these organs owe their existence?" And though the response necessarily is, "To inheritance," it is true this answer explains nothing; but vague as the idea may be, much is, nevertheless, gained by recognizing the fact that certain functions are inherited, others not. Only a portion are acquired by experience. The question of

the inheritance or the acquisition of a function of the brain, upon which everything depends, — as far as the spiritual development of the child is concerned, — must in every single case receive an answer ; otherwise we will be lost in the labyrinth of appearances and opinions.

First of all, there must be a clear conception that the fundamental, intellectual functions, which make their appearance subsequent to birth, have not originated subsequent to birth. If, in a word, they were absolutely non-existent before birth, then it would be perfectly inexplicable *whence* and *when* they come. The contents of a fertilized hen's egg certainly feel nothing when they are frozen as hard as a rock ; but after the egg has been thawed out, and incubated for three weeks, these very same contents, now transformed into a living chicken, *feel*. If the capacity to feel, as soon as certain external conditions are realized, did not inhere in the egg, then the capacity must, during incubation, have arisen from matter incapable of feeling ; that is to say, it would, in this view of the case, be necessary that the material atoms should not only arrange themselves differently, attain by decomposition and recomposition new chemical qualities, as is really the case, not only, as also really happens, be able to alter their partly dependent, partly independent physical peculiarities, such as electricity, accretion, etc., but also that they shall acquire totally new powers, which have hitherto been neither physically nor chemically hinted at. For

neither chemistry nor physics can add to the material of which the egg is composed any other than chemical and physical qualities but in the course of a normal incubation, with suitable conditions and processes such as warmth, atmospheric air evaporations, and the giving off or expiration of carbonic-acid gas, and these qualities are like those of the being which produced the egg. We must, therefore, admit that from its parents something passes into the egg, which, besides the known or unknowable chemical and physical qualities, possessed other latent, neither chemically nor physically recognizable qualities; in short, psychical, and hence physiological, attributes; possessed *potentially*, that is to say, and needing warmth, air, etc., for their actual unfolding. The same conditions are requisite for the development of the tissues and organs of the embryo, since these tissues and organs are not contained as such in the albumen, sugar, fat, water, and salts of the egg, and do not, therefore, belong to the purely chemical and physical dispositions, but resemble in all cases the beings who were its ancestors.

There inhere, therefore, in some parts of the egg contents, undoubtedly, certain *potential* qualities; powers of sensation, at least. And these parts must at the same time be those out of which arise the germs, the protoplasms of the embryo. There are, admittedly, cell formations with independent movements, to which we dare not deny certain powers of differentiation, any

more than we can deny it to the lowest plant animal or zoöphyte. They grow and move themselves by the pushing out and drawing in of pseudo feet; they evidently take up nutriment as does the zoöphyte, require oxygen, multiply themselves by fission, and behave in general like the amœbæ, or other simple living forms. The opinion, however, that these cell forms possess certain psychical dispositions, however vague, — certain, even if dim, powers of sensation, — is incontrovertible.

Everything favors the idea of the transmitted continuity of the power of sensation. It is not produced each time anew in the human being out of matter in itself incapable of sensation, but it becomes differentiated in the egg out of those parts in which it inheres as a hereditary quality, and it is brought later to active participation by stimulation from without, — a stimulation from which the embryo is shielded, and hence in the embryo sensation is scarcely noticeable, while in the new-born child it is very marked. The soul or psyche of the new-born child does not therefore resemble a *tabula rasa*, on which the senses must write impressions, so that out of these impressions, in the thousand-fold changes of our lives, our total mentality shall be produced; rather, the white page is already before birth written over with illegible, unintelligible, invisible characters, the vestiges of the inscriptions of unnumbered sense impressions of long-past generations.

So dim and blurred are these characters, that one would indeed be tempted to regard the page as unwritten, were he not observant of the changes that take place upon it in the very first years of life. For the more attentively we look, the more easily legible becomes the writing—at first unintelligible—which the child brought with it into the world. One thus realizes what a legacy each individual has inherited from his ancestors, how much there is that cannot have been the result of his own sense impressions, and how false is the prevalent opinion that man learns how to feel, and to will, and to think, by means of his senses, alone. Heredity is quite as important a factor in psychogenesis as is individual activity. No human being is here a *parvenu*, who has developed his soul by his own personal experiences; but by means of his experience he must revitalize and cultivate his inherited gifts,—the remains of the experiences and activities of his forefathers. It is difficult to discern and to decipher the mystic writing on the soul of the child, and just this constitutes the principal task of this work.

PREYER.

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INTRODUCTION.

DEVELOPMENT OF THE SENSES.

PREYER asserts and demonstrates that all psychogenetic power resides in the activity of the senses. Without this activity there is no mental development.

Psychogenesis, then, proceeds through the following four stages of sense activity: First, a nervous irritation develops *sensation*; this many times repeated produces the ability to recognize time and space, and hence *perception* of cause and effect, and finally the *conception* of ideas, ending in logical *conclusion* or reason.

It is of essential importance to the right understanding of the mental and spiritual development of the adult — a being of independent action and thought — to know as much as possible of the gradually unfolding sense activity of the new-born, irresponsible child, not yet able to act or to think.

Preyer says that a child which is born in full possession of its senses will give evidence of that fact by acting, even on the very first day of its life, differently from children who are in some respects lacking. He accounts for this by supposing traces at the nerve centers remaining there as the accumulations of the thousand-

times repeated acts of ancestors, thus forming a hereditary education quickly responsive to normal sense impressions.

Primary nerve motions are the starting-point of all mental activity; and this earliest mentality begins probably with a discrimination of the impressions of time and space, as evoked by the act of sucking.

The perception of succession in time is, however, very manifestly much sooner developed than the idea of space, or of a causal connection between sensations and objects. For instance, the child's very first experience teaches it that a certain contact of the lips is followed by the pleasant sensation of something warm and sweet in the mouth, and thus it constantly desires this contact, evidently recollecting a chronological order of sensations, but as evidently failing for a long time to recognize a logical connection. This is proved by the fact that it often, at first, notwithstanding the very distinct difference between that portion of the breast from which the milk flows, and any other portion, will catch the skin anywhere and suck vigorously upon it; and even for months will, when hungry, persist in a fruitless sucking of its own fingers, or of any other soft object. This is the more singular, because very early the child learns to recognize by sight the mother's breast as the source of its ever-recurring satisfaction and delight.

The starting-point for educators is the recognition

of predisposition, or, with another word, disposition; and this is clearly a matter of inheritance. As before indicated, there are on every cell of every tissue and organ of the new-born creature, countless memories, the result of the experiences of unnumbered generations that have preceded him. Dim and illegible as are these tracings upon the soul of the child, they are there. They are neither created nor destroyed by the individual activity, but still every experience of the individual life tends to modify them, and here, we repeat, the true value of a careful study of the young human being is made clear.

CHAPTER I.

THE SENSE OF SIGHT.

THIS being the first and most powerful of the special senses in promoting intellectual development, Preyer made many observations on its evolution, and has followed the gradual improvement of the function in the ensuing directions, viz., sensitiveness to light, distinguishing colors, movements of the lids, movements of the eyes, direction of the glance, seeing near and far, and conception of the thing seen.

These indications, together with his description of the manner in which he conducted the experiments, will be in the highest degree helpful to mothers in pursuing similar observations.

Five minutes after the birth of Preyer's child, he held it toward the window in the morning twilight, and remarked that it alternately opened and closed its eyes partially at first, and then shortly unclosed them fully, at the same time frowning perceptibly. But long before the end of the first day a marked change of facial expression took place when the father's hand intervened between the child's eyes and the light from the window. Evidently

the nerves of sight already responded pleasantly to the influence of a soft light.

On the second day he snut his eyes quickly when a lighted candle was held near them, and on the ninth day turned his head away energetically when a candle flame greeted his eyes on suddenly awaking. As, however, on the very next day his eyes remained wide open with the lighted candle shining into them at a distance of one yard, it may be noted that light displeased only by sudden contrast with darkness (of sleep or otherwise). This was further proved by his staring fixedly at a burning candle on the eleventh day, and also at a bright curtain chain which was held within his field of vision. So manifest was his pleasure from these objects, that he cried when they were removed, and was quieted by their restoration.

From the sixth day on, he voluntarily turned his head towards the window. From the second month, he expressed loudly his delight at the sight of shining objects, and in the tenth month he laughed out loudly when the lamps were lighted, and tried to seize the globes.

COLOR SENSE.

It is difficult to decide when the child becomes able to distinguish colors, at least to discriminate between red, yellow, green, and blue. At first, certainly, he feels only, and that imperfectly, the difference between light

and dark. It is not until three or four days after birth, that the optic tract, till then gray, becomes endowed with its medullary substance and permanent color, and even after this the power to separate color impressions proceeds but slowly.

Probably the first object which attracted the attention of Preyer's child, on account of its color, was a rose-colored curtain hanging a foot distant from his face, and shone upon by the sun. This was before the end of the first month, and excited audible and unmistakable signs of pleasure, as did also that same evening the candle flame at a distance of one yard. When his child had reached the age of twenty-one months, Preyer instituted a systematic series of color tests by means of the oval counters prepared by Dr. H. Magnus, of Breslau.

The babe understood the meaning of the word "give," and it also doubtless observed the difference of the colors, but it gave at this time absolutely no sign of ability to pick out the color demanded. This, most likely, was not in the least the result of incapacity of the eye to distinguish the differences of the colors, but the mental difficulty of adjusting the sounds of the words "red," "green," to the sights red, green.

In order to discover certainly how this power to differentiate colors came into definite existence, Preyer undertook, toward the end of the second year of his child's life, the most careful experiments, amounting to several

hundreds, daily every morning for weeks, and then, after a week's interval, daily again.

After repeatedly pronouncing the names "red" and "green," at the same time laying before the child the corresponding colors, the connection between sight and sound was gradually established. As before remarked, there was at twenty-one months no such connection in the mind of the child, but between three and four months after this time (on the seven hundred and fifty-eighth day of his life, to be quite accurate), the boy, to the father's surprise, gave eleven correct and six incorrect answers to the questions, "Where is red?" "Where is green?" And five days later he returned fifteen correct answers, and only one incorrect. Finally, on the next day to this, he gave ten correct and no incorrect replies, thus clearly proving that he had learned to couple together properly the audible and the visual impressions, red and green. Yellow was now added, and each of the three colors was correctly named once by the little one; but he then showed the reluctance which often renders impossible with so young children the further carrying forward of color tests, and he confused the colors repeatedly in his replies.

Blue was next added, and proved the most difficult of the four for the child to distinguish and name. Yellow, on the other hand, was easiest learned and best retained. Green was, next to blue, the most difficult; especially after several colors were placed before the child. At

first, when only green and red were present, it seemed easy to distinguish green as being "not red." Yellow and red are indeed the colors first recognized by all young children, and this doubtless has its physiological cause in the state of the retina, the darker colors, green, blue, violet, etc., being less distinguishable on account of the greater absorption of the light.

About this time, Preyer changed his method of inquiry, and instead of asking, "Where is green?" etc., he took the colored counters, and asked, as he laid them before the child, "What is that?" Correct and incorrect replies were received in the following proportions:—

	<i>Red.</i>	<i>Yellow.</i>	<i>Green.</i>	<i>Blue.</i>	<i>Purple.</i>
Correct	10	9	9	5	11
Incorrect	2	0	1	7	1

This was when the child was two years and nine months old, but caprice and reluctance came in often as factors at this age. Sometimes there was complete inattention, and sometimes, on the other hand, he would himself bring the box, and demand a color lesson.

Gray was added to the number, and was more easily recognized than blue, which still remained the hardest.

The grouping of tints and shades of the same color was now experimented upon, and very imperfectly successful for a while. Blue was confounded with purple, and also with green. All pale colors were confounded with gray,

and all dark shades with black; but black, red, and yellow were now given with utmost certainty.

An interval of two months supervened at this time, while Prof. Preyer and his family were traveling or were residing at Garda Lake. On renewing the examinations after that, the child's confusion of the lighter colors was great. The following table gives the proportion of correct knowledge at this time:—

	<i>Orange.</i>	<i>Red.</i>	<i>Yellow.</i>	<i>Green.</i>	<i>Blue.</i>	<i>Purple.</i>	<i>Gray.</i>	<i>Brown.</i>	<i>Pink.</i>	<i>Black.</i>
Correct .	0	17	22	0	0	9	0	4	3	3
Incorrect .	2	0	0	18	13	4	5	3	4	0

After this, the child took out the colors itself, and handed them to the father, naming them as he did so.

Yellow and red in all tints were now removed from the box, and the child immediately showed less interest in the lesson, and insisted that his father should name green. Many other amusements diverted his mind from interest in colors in those days, and he did not succeed well at all in grouping the shades.

About this time he also invented a name. On receiving a bouquet of yellow roses, the yellow was immediately named, but the leaves he insisted on calling "garni." At this date, too, he makes the remarkable statement that "he does not know green and blue, but a grown-up man knows green and blue."

When not quite three years old his color sense had reached the development indicated by the following

figures, the table showing the total results of examination:—

	<i>Correct.</i>	<i>Incorrect.</i>
Yellow	232	8
Brown	79	8
Red	235	36
Purple	139	24
Black	39	7
Pink	76	29
Orange	47	23
Gray	35	33
Green	101	123
Blue	61	151
	<hr/>	<hr/>
	1,044	442

Yellow, it will be seen, holds overwhelmingly the upper hand, and blue comes last of all. Yellow, in fact, was discriminated a full year sooner than blue, and this is an observation which is verified with most children. One boy of four months showed his delight in and preference for bright red, and all children prefer the warm to the cold colors.

It remains to be noted, that when Preyer's child was three years old, he moved about in semi-darkness with astonishing celerity and certainty; and that, to the amazement of those who had observed his many mistakes in the earlier color lessons, he could, in the beginning of his fourth year, distinguish not only all the colors, but even the finest differences in tones of color.

MOVEMENTS OF THE EYELIDS.

It is generally found that new-born children, even when awake, keep the eyelids closed, or if open, only partially so, or asymmetrically, as one eye often opens while the other remains shut. Preyer's child opened both eyes wide before the end of the first day of his life, but as a rule he did not during the first month open both eyelids equally wide, and the same irregularity was observed in closing them.

Various atypic movements of the eyelids occur constantly during the first weeks of a baby's life, and through the observations of several German scientists the fact seems proven that these curious motions of the eyelids (such as lifting the eyelids while turning the eyes downward, and also turning the eyeball upward without at the same time lifting the lid, and without wrinkling the forehead) are the result of a certain lack of co-ordination of the eye muscles which take place later.

The turned-up eyes of sick children and of hysterical patients are only exaggerations of this earlier atypism of the new-born. On the other hand, the closing of the eyes under a strong light, and also the contraction of the pupils, are innate, and belong to the reflex system of the sensory motor nerves.

The hasty closing and immediately thereafter opening of the eyes, however, which we call winking, is not

present in very young nurslings, for the lids remain unmoved when we approach the hand suddenly very near to the open eye. Adults, on the contrary, wink involuntarily under similar circumstances, even when a pane of glass is between them and the approaching hand.

Preyer took special note of the time when winking first occurred in his child as a symptom of fright, and also as an expression of surprise. Not until almost three months old did the child positively wink at each successive motion of the father's hand brought suddenly towards his face, although before this the least touch upon either the lashes or lids of the eyes provoked immediate winking.

After three months, however, either the sudden motion toward his face or a loud noise near him would cause winking, and also the throwing up of his arms.

It was at this period, too, that the babe began to close his eyes when the bath water touched them, — an occurrence unknown before. After this time winking was a constant symptom in response to any sudden or unexpected impression, and was succeeded by a questioning look when his father blew upon his eyelids, the eyes staring invariably in the direction from which the impression came.

It may be remarked here that the Darwinian assumption of the existence at the nerve centers of an inherited sense of danger is quite superfluous to account for the

winking, since the quick closing of the lids is sufficiently explained by the fact that any sudden nervous impression, such as a loud sound or a sudden light, brings about a closing of the eyes, unaccompanied by any turning aside of the head, or drawing backward of the body, such as occurs later.

On the twenty-eighth day the child looked steadfastly for the first time at the face of his nurse, then at his father, and then at his mother.

At the end of the seventh month he opened and shut his eyes in the utmost amazement on perceiving the quick folding and unfolding of a green fan held about half a yard away from his face. His surprise diminished after this performance had been repeated several times, but was revived on a sudden vanishing and reappearing of the fan, and was indicated by motionlessness of the eyelids and by the wide-open mouth. Desire, however, as well as astonishment, is expressed by the widest possible opening of the eyelids. On taking away the milk from his mouth when he was about six months old, he fairly tore his eyelids as far apart as possible, and held them motionless, at the same time looking fixedly at the milk with an indescribable longing expression, and uttering a peculiar begging sound with closed lips, which latter habit was continued into his second year.

A point of some moment for psychogenesis is found in the fact that with nurslings a feeling of pleasure and comfort is always expressed by wide-open eyes, and that,

on the contrary, closing the eyes and pinching the lids together is the expression of something disagreeable. As early as the third day of his life, and again on the sixteenth and the twenty-first, this wide separation of the lids on experiencing a pleasant sensation was shown by Preyer's child when taking his mother's breast, and also when being put into a warm bath.

MOVEMENTS OF THE EYES.

Preyer believes it thoroughly demonstrable that the human infant comes into the world with a very incomplete equipment for the function of vision. At first, the eyes receive only impressions of light and darkness. Perceptions of space come later, after the muscles which control the eye have been gradually developed into co-ordinated action. For weeks a new-born babe rolls its eyes about as aimlessly as it stretches its arms and legs.

It may hold one eye still and move the other, or it may turn up the eye of one side while it turns the other outwards or downwards; in short, it can and does perform many movements of the eyes which would be utterly impossible to a grown person, or to a child whose eye muscles have once learned to act together and in obedience to the will. But chance alone would bring the two eyes to a common focus sometimes, and the result being agreeable, a permanent co-ordination and conscious act of seeing would be gradually evolved,

and thus unsymmetrical movements would vanish entirely.

It is to be remarked, however, that up to the end of the first year of life all sorts of atypical motions of the eyes occur with far greater ease than afterwards.

ON FIXING THE GLANCE.

The ability to fasten the glance upon any object is absent in the new-born child, since fastening the glance is a conscious act, and the child is not yet capable of a conscious act nor a voluntary use of the eye muscles. On the other hand, the head is turned toward the window, even within the first twenty-four hours, and impressions are surely made on the retina; but what is called fixing the gaze—for example, upon a lighted candle—is only a certain motionlessness of the eye while the bright object continues within the field of vision.

This turning of the head or of the body toward the window in the first week of life is merely the automatic seeking of a repetition of a sensation once found pleasant, and must be classed with such movements as the turning away of the head from a blinding light, long before the child has any idea of direction.

The *second* step toward an intelligent use of the eyes is betokened by the turning of the head from one fixed object within the field of vision to another object near it.

Preyer's child did this on the eleventh day, look-

ing from his father's face to the candle. At this age and later, children look mainly at the ceiling, and this direction of the gaze, it has been often said, distinguishes the young human being from the lower animals; but in truth, the sole reason of this habit is the carrying and holding of the child in a horizontal position; but for this, it would seldom look upward.

The *third* step is characterized by the following of a moving bright object with both eyes, while the head remains quiet. On his twenty-third day of life, Preyer's child followed with both his eyes a candle moved slowly from left to right and back again. On the candle being elevated, the eyes took that direction also, and there appeared in them a sudden look of intelligence that had never before been observed in them. At least twenty times that day Preyer repeated this experiment, and was surprised at the result, for most children do not perform such genuine acts of seeing before several months usually; and he concludes that possibly the evolution of the mechanism of vision had been quickened in this case by his own efforts directed towards it since the first day of the child's life. •

From this time on, active "looking," in contradistinction to "staring," took place, and the proper focusing of the babe's eyes was found to be constantly accompanied by the expression of satisfaction or intelligence already observed. Five weeks old he looked at the Christmas tree with great satisfaction.

Before the end of the second month, the oscillatory motions of bright tassels, balls, etc., were followed by the child with evident joy, and about this time he gazed for half an hour at a swinging lamp, giving uninterrupted expression to his delight by waving his arms and crowing. Not long after this — at about his tenth week — he seemed to recognize, or at least to perceive as pleasure-giving objects, the faces of his father and mother.

Now begins the *fourth* stage of seeing, which consists in a voluntary directing of the gaze towards bright objects, or towards the quarter whence sounds come, and next to the constant roving in search of new objects.

At about the age of three months the eye steadily pursued the motion of a hand when not moved too fast; but the favorite occupation of the eyes at this time seemed to be the following of the movements of some person going about from place to place in the room; the child often turning his head more than ninety degrees in order not to lose sight of the person.

In the middle of the fourth month a pendulum vibrating just forty times to the minute was followed by the child's eyes with the exactness of a machine, thus proving that the turning of the eye to the side requires only three eighths of a second.

In the fifth month he looked inquiringly after his father on his leaving the room.

In the sixth month he looked after a sparrow which flew by.

Much longer time is required for the child to look after objects which he drops from his hand. As this has to do with a conception which every human being must evolve for himself, namely, the notion of *weight*, Preyer paid special attention to it, with the following results.

In the eighth month (at thirty weeks) the child had never yet looked after an object which he let fall from his hand to the floor. A week later he occasionally looked in the direction of something which he had seen or heard fall.

In the thirty-third week he was attracted by the slow lowering of an object held in his father's hand, and followed it closely with both eyes, but did not notice the same object if it fell to the floor.

In the thirty-fourth week he looked rarely after the toy he dropped.

In the thirty-sixth week he looked often, but not regularly, and never with attention, after the toys dropped from his hand, but followed with absorbing interest the rings of tobacco smoke which rose in the air near him.

In the eleventh month (forty-third week) he looked frequently, and with an expression of astonishment, after things he threw to the floor.

In the twelfth month he threw all sorts of objects down, and looked after them often. Once he threw

down eight times in succession a book which had been given him, and watched its fall with breathless attention.

In the sixty-third and sixty-fifth weeks he threw down things which displeased him, or of which he had grown tired, and generally followed them with his eyes.

In the first quarter of the second year he seldom threw things down, because he had been taught not to do so.

In the middle of the second year his greatest delight was in watching the bouncing of a ball from the floor, and his eyes followed the ball with the utmost precision.

The boy's recognition, therefore, of the fact that objects are heavy, and will fall if not supported, seemed to take place in this case in the forty-third week of his life. It would be highly interesting to know what the experience of other children is, with respect to this matter of observing falling objects, and it is to be hoped that a mass of observations may be accumulated as soon as mothers are willing to see the scientific and practical bearings of such subjects.

SEEING NEAR AND FAR.

The approximation of a lighted candle or a piece of shining metal to the face of a babe of from two to six weeks old, and not yet able to move his eyes, occasions that convergence of the pupils known as cross-eyes.

This is a purely reflex movement, and is therefore involuntary.

Owing to the still incomplete arrangements for seeing, there is no such co-ordination of muscles nor such functional preparation of nerves as would make a sharply defined picture on the retina possible. There is only the sensation of brightness and darkness. Probably the first images printed on the child's retina are the faces of his mother and nurse; and this because they, oftener than any other objects, are present in his line of sight.

The recognition of the fact that it is unnecessary to bring an object near to himself in order to see it, is probably a logical process, and therefore the result of experience. Still, this cannot occur until after the will is developed. For really to fix an object with the eye implies will; since there must be an intelligent focusing of the object in order to bring it plainly and clearly into just the right spot to be seen. The staring at a bright flame, etc., is not true vision, but merely the physical response to an impression of light; and even after the power to adjust the eyes is more or less perfected, and voluntary fixing of the gaze takes place, it must still be very inexact, because one often remarks unsymmetrical movements of the eyes of children after this period.

In fact, a genuine "looking" never can be said to take place until the child voluntarily follows a moving object .

with his eyes, and this act occurs usually after the lapse of three months.

It is not until much later, however, that the power to estimate the different distances of objects is established. How slowly the idea of space develops in a child's mind was shown by the following observations of Prof. Preyer upon his child, who had, of course, constant practice in looking at the objects around him, and who proved afterwards to have unusually sharp sight.

In the seventeenth week he moved towards his eyes such things as he accidentally grasped, and often tried to grasp objects which were at least twice the length of his arm distant; this continued through the eighteenth week, or till towards the end of the child's fourth month of life. By the eleventh month, he had almost ceased to carry objects towards his eyes and into his mouth, but, on the contrary, gazed at and handled them with the absorbed attention whose sign was always the pointing of the lips already alluded to.

It was observed that when a stranger came into his immediate neighborhood, the child's countenance took on an expression of the utmost astonishment, mouth and eyes wide open, and all the muscles remaining motionless in just the positions they were in when his eyes fell upon the stranger. The retinal image must have been quite clear, therefore, since it was so evidently distinguished from other retinal images.

The same thing was proved by his looking attentively

at and playing for a long time with a single long hair of his mother's, — this in the forty-seventh week.

In the fifty-first week some men sawing wood at a distance of a hundred feet occasioned much pleasure to the child, who looked at them attentively, thus proving that he could see plainly at a distance as well as near; but that he did not yet have a notion of the difference in distances was proved by the fact that at fifty-eight weeks, he tried again and again to grasp a lamp which was shining in the ceiling of the railway car in which he traveled.

At the sixty-eighth week (a year and four months) the child still reached too short, too far to the right or left, too high and too low.

When he was a year and eleven months old (ninety-six weeks), Preyer threw a piece of paper from the second-story window to him in the garden below, and the boy picked it up, looked at it, and reached it toward his father, at the same time evincing earnestly his desire that his father should take it from his hand, — a striking enough proof of how little he was able to estimate distance.

When a little over two years old (in the one hundred and eighth week) he recognized, evidently, in small photographs the faces of persons he knew, — the best proof of perfect accommodation of the apparatus of vision. And a month later he recognized in a book the pictures of household utensils equally well when

the book was held three feet from his eyes and when it was held three inches from his eyes.

All this shows that the eyes are perfectly well able to see objects at very different distances without knowing that they are at different distances, indeed, without knowing that there is such a thing as a difference in distance. This latter fact he learns probably by the moving of his own person to reach different objects, and also by his failure to grasp far-off objects when he reaches his hand toward them.

That a child learns, however, to take an object far sooner than to give one, is doubtless due to the fact of its immensely greater experience in taking. It is always reaching after objects, long before it makes any attempt to give them.

Altogether the child's orientation of itself in space requires much longer time than is required by the young of lower animals; for example, the chick, which learns correctly in a few hours the distance of the grain it feeds upon.

Man gains the notion of space by many a round-about and by many single experiences; he *discovers* it, in a word, whereas the lower animals inherit a nerve mechanism which seems to render individual acquisition in this direction unnecessary.

With the human infant the relations of right, left, up, down, are learned by stretching the arms, and legs, etc., but not the space relations behind and before,

because the child cannot see behind, and learns these relations after he has become accustomed to seizing things.

As to the question of whether the eyes of babies are naturally long or short sighted, authorities differ; the preponderance, however, at present seems to be in favor of the belief that most children are born long-sighted.

There is no doubt that the question of a child's capacity to see only near objects plainly during the first years of his life cannot be without influence on his whole mental development, but evidence is lacking as yet for the determination of this point.

One thing, however, Preyer insists on with great firmness, and that is, that the continued occupation of very young children with fine work, such as perforating fine threads, sewing, weaving, etc., if they, as is often the case, are overdone in kindergartens, will necessarily become injurious to the eyes. Looking closely at *small* objects with effort and with persistence is, even by the best light, hurtful to the sight of children of three to six years old, and must be absolutely prohibited by lamp-light; otherwise the apparatus of accommodation of focus will be exercised too disproportionately for near seeing, and will foster short-sightedness.*

* See Miss E. Marwedel's treatment of this point in her Kindergarten.

THE MEANING OF WHAT IS SEEN.

Many think that even after the baby has learned to distinguish single objects, he sees all things as if painted on a plane surface, and has no notion that anything is outside of his own eyes, no notion that anything moves toward him; has only, in a word, a vague sensation of light and dark. But this is true only of the first days of the baby's life, as could be made more than probable by adducing the evidence that Preyer gives as to the early convergence of the lines of vision, attention to certain spots in the field of sight, pleasure and displeasure at certain colors, etc.

In the sixth month, when the father nodded to him pleasantly, the boy laughed, and threw his arms up and down, but not so if a stranger nodded. He also noticed at this age his father's reflection in a mirror, became suddenly attentive, and turned quickly towards his father as if to compare or to confirm his first impression of the phenomenon. In the seventh month he stared fixedly at a strange face with great amazement, recognizing it, therefore, *as* strange. In the eighth month all sorts of bottles, wine bottles, water bottles, or nursing bottles, excited in him the most intense interest. He gazed at them, he begged for them, and always recognized them at a distance of three or more yards. This interest is explained by the fact that he took his milk from a bottle, which he held in his hands several times a day, and saw close at

hand, and thus naturally recognized similar objects more easily than anything else whatever, except human faces.

In the ninth month he showed the same sort of interest in boxes which resembled those in which baby-food was kept. But he also manifested an increasing interest in all his surroundings, especially in all new and moving objects, and turned his head quickly whenever the door was opened or closed.

In the tenth month the child showed the liveliest and clearest understanding of all such impressions as were connected with his food, watching its preparation with wide-open shining eyes and eager, longing expression.

In the eleventh month the child was hardly quiet a moment when awake; his eyes roved about incessantly, and his head was kept moving too, in the attempt to look at every one who came near, or passed within his sight.

Although these observations show an early development of visual recognition, as far as light, faces, and large moving bodies are concerned, still the following will prove how imperfect was the interpretation of new impressions, both at this period and later.

In the fifteenth month the child tried repeatedly to grasp the candle flame, reaching too short, however, and once clutched the flame itself, but this he never did again.

In the sixteenth month he tried to catch the streams of water which dripped from the sponge with which his head was being bathed. He seemed extremely surprised that

he did not succeed in holding them in his fingers like so many threads.

In the seventeenth month he was disappointed at the constant ill-success of his efforts to seize a cloud of tobacco-smoke which floated between him and the lamp at the distance of a few feet ; proving, of course, how incorrect was his apprehension of distance and of the substantiality of objects.

In the eighteenth month, seeing a black-clad man unexpectedly, the child became suddenly quiet, stared at him a whole minute, then fled to his father, and gazed motionlessly at the tall figure until the stranger left, when he immediately became rollicking again, and repeated "atta-atta" with satisfaction. In this case, evidently, it was the unexpectedness of the impression that had awakened anxiety in the child, for the gentleman was entirely friendly to him ; but it was not till after the completion of his second year that he ceased to be disturbed by the appearance of a black-clad man.

In the twenty-second month new impressions seemed to attract attention in a still higher degree, and what was mysterious was increasingly interesting.

In the twenty-fourth month he looked with great attention at moving animals, following even the slow snail and the beetle with his eyes, and seeming by his questioning expression to find them unintelligible. He treated them very tenderly, almost shyly.

At this time, too, the child's understanding of actions

and of the use of all kinds of tools seemed much further advanced than his power to interpret pictorial representations, although he had proved the inexhaustibleness of his imagination by the great variety of his plays.

Prof. Sigismund's child at the end of his second year called a circle a "plate," a square he named a *bonbon*, and his father's shadow, which at first he was afraid of, he suddenly recognized as a "picture," and cried out joyfully, "Papa." Preyer's boy at a later age than this called a square a "window," a triangle a "roof," a circle a "ring," and four little dots "some birds."

Not till after the third year did Preyer's child evince a capacity to represent well-known objects by lines upon paper, or by cutting out. Before this he wished to draw, and attempted to represent, with all sorts of lines, an engine, a horse, a spoon, a plate, and a bottle, but he did not succeed without help. Preyer says he knew of but one child who could, before he was four years old, and without any instruction, draw, or cut out, figures of animals, giraffes, horses, lions, etc., and even a man in a sitting posture, so accurately that any one would recognize at once the object represented. Such rare talent indicates a hereditary sense of form. An average child at that age is not even able to draw a circle, but this child could not eat a piece of bread without biting out of it representations of animals. He also drew with a stick in the sand, modeled in clay, saw pictures in the clouds, and would devote himself (quite from inward impulsion) for months

at a time, with the greatest perseverance, to the practice of his art.

Preyer's boy's daily and pressing desire and expressed wish to draw pictures of a locomotive engine (this was after the thirtieth month) arose doubtless from seeing that large moving mass so often. This object interested him greatly at an early age, on account, probably, of its causing such great alterations in the field of vision, and so exciting a large number of nerve fibers.

CHAPTER II.

THE SENSE OF HEARING.

THE observations on the gradual development of the sense of hearing have reference to the short duration of *normal deafness* in new-born children, and to the first impression of sound-waves, and are followed by some statements concerning the hearing of new-born animals.

All children are deaf when first born. Formerly this was attributed to the filling up of the tympanic cavity with mucus, and that this would obtain until the cavity had been emptied; but it is at present generally accepted that this temporary deafness is owing to a want of air in the tympanic cavity, before breathing is fully regulated in the lungs. Prof. Preyer, giving an explanation of the successive changes, says: "I must protest against the opinion that children three or four weeks old have a small hearing capacity, and that hence it is difficult to decide whether a given child is deaf or not. The nursling one or two days old already reacts against sound; and if this should not be the case, it will be found in the tardiness with which the tympanum becomes penetrable by air. According to my own observations, and those of a number of reliable mothers, it cannot be

doubted that a child, when in a normal condition, hears after the first few days the sound of the human voice. A somewhat protracted dullness of hearing is useful to the baby by preventing the often too numerous reflex movements, and then with a tendency to convulsions. But in case at the age of four weeks no sign of hearing should follow a loud sound, a suspicion of deafness will be justified."

THE FIRST SENSATIONS AND PERCEPTIONS OF SOUND.

It is extremely difficult to decide how many hours, days, or weeks elapse before the first sensation of sound is felt, because what seems proofs of hearing may in reality be but the signs of other strong sensations. For example, starting, throwing up the arms, movements of the eyelids, crying, may be the signs of fright, etc.

Kussmaul says he could strike the loudest and most inharmonious chords close to the ears of new-born children who were awake, without affecting their nerves at all.

Preyer's child jerked both arms spasmodically after a loud call emitted by the father in the twenty-first hour of the child's life, a result which might easily have been occasioned by the speaker's breath striking the child's face, especially as whistling, clapping of the hands, and speaking in the ordinary voice had no effect.

It was not until the third day that Preyer was assured of his child's power of hearing. On that day the clap-

ping of hands and whistling near him caused him to half open his eyes while lying in a quiet, satisfied way. As this action was repeated several times on the fourth day, while it did not follow the same noises on the third day, it seemed conclusive that hearing was established when the child was four days old. It was also on the fourth day that the child stopped crying on his father whistling near him. When ten or twelve days old his father's voice always quieted him, at the same time occasioning an indescribable expression.

On his twenty-fifth day, speaking softly to him induced repeated closing of the eyelids, and the next day he started as a soup tureen was noisily covered, though he could not see it. This proves that strong waves of sound startled him as much as an adult.

On the thirtieth day, as the child lay in comfortable rest, Preyer stood before him, and without moving, said in a loud voice, "Yes!" Suddenly he threw his arms up high, jerking the upper part of his body also, while the happy expression of his face was replaced by a very serious one. This was repeated on the slamming of the door.

In the fifth week the sensitiveness to sound was so great that the child seldom slept in the daytime, if persons in the room spoke or walked about, and always turned his head when any one approached the bed. In his sixth week his crying was stilled at once by the singing of his mother. When she sang first, he opened his

eyes very wide, showing symptoms of astonishment, also the next time, and then and afterwards seemed to connect the sound with the oval shape of his mother's mouth, which seems usually the case with children of four months, who laugh and shout as soon as the mother sings. In the seventh week the sense of fright from loud sound was still greater; while he was sleeping some keys dropped on the floor, and his arms were immediately stretched out, and remained so for two minutes, unchanged, with all the fingers spread. The position was like the spread-out wings of a frightened bird.

For harmonious musical sounds the child had a great liking, the expression of his face being very happy while his mother sang; and even when hungry, a soft cradle song would keep him patient, when speaking proved quite insufficient.

At the eighth week the child heard piano music for the first time. He showed an unusual tension in the eyes, and a quick movement of the arms and legs, accompanied by laughter.

Pleasure in music remained unchanged, so that more than a year before the first imperfect attempt at speaking, the distinction between musical and other sounds was fully developed.

He frequently at the age of two or three months showed his pleasure in music by certain responsive sounds of his own; and any noise was responded to by a quick opening or closing of the eyes, and a throwing up of the

arms, no matter what the position of the body. At seven or eight months the movements of the arms were not so frequent. At eleven weeks, Preyer noticed for the first time what had not been observed by others before the second quarter of infant life, namely, the turning of the head in the direction from which the sound came. The father knocked on a mirror behind him, and he at once turned his head in the direction of the sound.

Altogether at this period it was surprising how easily his attention could be directed to simple tones, scales, and harmonies; and how, forgetting any chance uneasiness, he would listen, with a peculiar tension of the eyelids.

In the twelfth week the turning of the head towards the sound was very quick, though the right direction was not always found at once. In the sixteenth week the head turned toward the sound with absolute certainty. Before this, a hand-organ in the garden or the sound of voices in the next room was not noticed, but now they provoked lively motions of the head, and a changed and interested expression of countenance.

The first noise artificially produced by himself was the rumpling of some paper in his hands, and seeming to give him pleasure, it was repeated very often.

When he was twenty-one weeks old, the gong beaten to chain his attention while being photographed, rendered him absolutely motionless, his eyes staring fixedly at the metallic plate. And, indeed, his hearing was so

developed by the fifth month that he would stop nursing to observe the cause of any noise in his neighborhood. When the half-year had been reached, he would often stare with fixed, wide-open eyes and open mouth at his father's face, while the latter sang before him, and he crowed exultingly when he heard military music.

At eight months he winked suddenly whenever he heard, not merely loud sounds, but any new sounds; for example, when his father imitated the noises of animals, he evinced not only fright but astonishment. Fright caused a jerking of the whole, instead of, as formerly, only the arms and legs.

In proof, however, that the starting was not always an expression of fright, it is mentioned that at nine months the child replaced more than a dozen times the lid of a large glass water-bottle, each time making so much noise with it that he winked and shuddered, while his face wore an absorbed expression of attention. As he was eager to repeat the act, it was evident that his enjoyment of those sensations of touch and sight outweighed the less pleasant effect of the accompanying sound impression, which was nevertheless so intense as to cause the self-motions described.

During teething the irritability of the auditory nerves was so much greater that even a loud word would often occasion winking, staring, quick breathing, screaming, and even tears.

When a year old, the crying child was quieted by the

repeated sound of "sh" as easily as in the first month. No other sound — neither sharp "ss" nor "pst" — had any such effect; but, on the other hand, all singing had, even when the notes were false.

At about this time, three hundred and nineteen days, is to be noted a remarkable acoustic experiment, which testified to the great intellectual progress of this child. He struck a plate several times with a spoon. Happening to touch the plate with his other hand once at the same time that the spoon fell on the plate, the sound was damped, and the difference immediately noticed by the child, who then changed the spoon to the other hand and repeated the experiment precisely as before, dampening the sound with the hand which formerly held the spoon, etc. In the evening this was repeated again with the same result. Manifestly, the function of causality existed in vigorous development, and the question the child, still wholly without verbal speech, tried to decide was, "Is the cause of this difference in the hand, or in the plate?"

At this time, also, he was accustomed to observe the noisy filling of the coal stove every morning in the room where he was; one morning he heard the same noise from the next room, where the stove was being filled, and immediately turned his head in the direction of the sound. Seeing nothing, he twisted his head around almost one hundred and eighty degrees and looked inquiringly at the stove in his own room, showing again,

conclusively, the exercise of the logical faculty. Such occurrences were not unfrequent. Once, for example, at thirty months, he chanced to cover one ear with his hand while a teakettle was boiling on the table before him. At once he perceived the lessening of the sound, took his hand away, and listened with open mouth and astonished eyes to the altered noise. Five or six times he placed his hand over his ear to confirm the connection between the changed sound and the position of the hand, and then he ceased to care for it, because he became accustomed to it.

After the first year he would, on striking the piano keys, turn around from time to time to see if any one was listening to him. He laughed at the singing of a canary; he laughed at all new sounds, such as hawking, gurgling, and even at thunder. A favorite acoustic amusement was the holding of a watch at his ear to note the ticking. Sometimes he held it on the head or the cheek, or the father held it on top of the boy's head, the attentive expression showing that he heard it, and that, therefore, the sound-conducting power of the bones must have been long established.

His enjoyment of music increased very sensibly from the first quarter up to the third. But it was not until the last half of the second year that the child's motions—which had always been lively under the influence of all sorts of music—kept perfect time. He danced, indeed, in an unrhythmical fashion, at twenty-



one months, and a little later kept time with his arms or with one arm tolerably correctly, trying at the same time to sing a song; which last, however, was only later partially successful. He preferred striking the piano with both hands at once (a single key with each hand) to playing on the fife and drum (at two years), and it is remarkable, in view of his acute auditory sense for noises and vocals, that even at the end of the third year it was impossible to teach him to distinguish the three tones, C, D, E.

Another child, on the contrary, a little girl, could at nine months sing correctly every note as it was struck on the piano; disliked discords, and cried violently whenever a tin trumpet was blown. This child and two of her sisters could sing melodies before they could speak. Not only the volume and shade of a tone (*moll*) are fully understood by such musical children at eight months, who followed with great attention any musical performance. One child sang itself to sleep at nine months old, and at nineteen months sang all little songs correctly, clapping her hands rhythmically. One other little girl, eleven months old, jumped and turned her body and hands, on hearing music.

In the third year it was hard to awaken my boy by noises. He very often fell asleep, even when there was much noise near him.

In comparing some observations of Darwin and Demme with others, Prof. Preyer concludes with the

remark that individual differences depend greatly on hereditary influences.

THE HEARING OF NEW-BORN ANIMALS.

Prof. Preyer gives a very interesting chapter on the effects of sounds on animals, proving that the sense of hearing in the guinea-pig and the chicken is developed at birth, and is enormously superior, comparatively, to that of the child.

We have to admit that the child in the beginning hears nothing ; afterwards hears many things indistinctly ; and only little by little, in the largest number of indistinct sounds, something is recognized ; and finally, many things are heard distinctly, just as the adult acquires a language in a foreign country. Strong, high tones are more quickly perceived than deep tones. Every mother loses many thousand words in speaking, whispering, and singing to her child, before one is heard ; and many thousand words are said before the child understands them. If not so exercised, the child would learn to speak much later.

CHAPTER III.

THE SENSE OF TOUCH.

THE observations about the sense of touch of the new-born child and the nursling refer more to the sensibility of touch. After an extended scientific analysis of the nervous condition before birth, and that by a scientific demonstration of the condition of the foetus and its partial nervous irritability of the tongue and lips, Prof. Preyer comes to the conclusion that, although "the new-born child is not as fully aware of pain" as the adult, the difference between pain and pleasure is clearly understood. He refers to the nervous sensation of the tongue, the sucking immediately after birth, and the mimical power of expressing the difference between bitter and sweet.

Nose: in touching the point of the nose, the child closes both his eyes.

Palm of the hand: pressing a finger into his hand, he will cling to it. A pushing motion is followed by a movement of the other arm. The sensibility in the palm of the hand is less than that of the skin of the face.

The touch of the under part of the foot causes the stretching of the toes. Beating against it leads to a dorsal

flexion of the foot, the knee, and hip joint. Pricking it with a needle shows reflexes of pain.

Between two and twelve weeks old the greatest restlessness, crying, and discontent of the child were immediately silenced by putting the finger into the ear; the eye showed great tension. The question arises, Was this the effect of diminishing the noise by closing the ear, or was it an acoustic irritation? But after the first half-year this experiment ceased.

The sensitiveness of the skin of the forehead is very great, which is very often demonstrated by the early act of baptized children, and it may be called greater than that of adults.

It seems very difficult to fix the time when the frequent reflex motions of the sense of touch cease, and the normal condition of the adult is reached. Notwithstanding some inherited individual differences, and the abnormal increase of reflex motions perceived, we may conclude that among the new born the wearing out of the nerve traces by the constant repetition of the irritation, that is, the final decrease of the sensibility of touch, is of great importance.

Before birth and at the beginning of life these nerve traces are not so easily *passible* as after some reflex irritations; therefore the greater reflex.

After many experiments on animals, both before and after birth, by Mr. Soltman and myself, we found that reflex motions increased constantly, until at a period

which might be called the beginning of *reflex reaction*. But it must be remembered that while the central traces, by constant use, become more and more passible, and quickened in motion, the peripheral ends of the nerves of the skin become, by inevitable contact of cold and wet, less sensitive.

The first apprehension of touch. From the sensitiveness of touch to the apprehension of touch is a long step. The simple conception of touch has to be connected with successive conception to produce the conception of time. It is supplemented by the conception of space, and finally, with that of causal connection between two or more impressions in regard to time and space, forming the conscious conception of bodily contact.

If the new-born child is softly beaten, he has a conception of it, because he cries; but he does not know anything of the *place*, nor of the *cause*. If beaten once more, a possibility of a remembrance or of a difference in time is offered. In case the beating is applied at different places on the skin, the child becomes conscious of a difference in space, besides a conception of pain, because it is different nerve fibers which are irritated. If the beating is interrupted by painless pauses, then in time the hand will be recognized as the cause of pain, and very likely be pushed back.

On the other hand, if the contact gives pleasure, it will be desired. In both cases, movements have to be

performed, these leading again to new impressions and conceptions.

Undoubtedly, the first successful attempt at grasping is very interesting to the child, in experiencing touch at the ends of his fingers. If not, he would hardly look so attentively at his own fingers. This became still more so, when, on the twenty-third week, in striking about, one hand accidentally grasped the other.

There is the clear distinction between the reciprocal touch of the two surfaces of his own body and that of a foreign body, which is a great step forward in the recognition of the Ego. The first timely connection in the sensibility of touch in another body is most likely that which is gained in sucking. By placing the nipple between the lips an impression is made of something wet in his mouth, connected with the sweet taste.

This is one of the first experiences the young babe receives: that in consequence of a certain touch of the lips, a still more agreeable sensation is felt in the mouth; therefore the child desires the touch of the lips, and any similar soft impression is welcome.

This is illustrated clearly by the baby's habit of sucking his own fingers, and it makes the acquaintance of any new object by at once putting it in his mouth. This shows how much easier and stronger the timely succession of the same impression is perceived than the occasional and casual one. The invisibility of the milk may support this physiological mistake, and it would

be of great value to find if the nursling who receives the milk only from the breast, continues also the useless sucking, as compared with one who receives the milk from the transparent bottle.

The habit of useless sucking seems so much more surprising as the nursling shows quite early a kind of reasoning activity by opening the eyes quite wide on seeing the mother's breast.

THE SENSIBILITY TO TEMPERATURE.

There are very few observations on the differences in temperature. It is an open question whether the sudden cooling off of the child at birth, which may vary several degrees, produces at once a sensation of cold in the full birth as well as the child of premature birth, even if there is a trembling or shivering. Omitting some scientific remarks on this point, Prof. Preyer continues with the observation that the first bath produced a pleasant sensation if a comfortable warmth was given. It is comfortable in contrast to the process of cooling just experienced, which can be clearly seen in the facial expression of the new-born child, who but a few moments before was found wet, trembling, and crying.

At the seventh day I perceived a joyous expression, with wide-open eyes. No other sensuous impression is able to produce, at this early period, a similar expression of contentment. The conception of warmth and cold, both of which are not felt before nor immediately

after birth, becomes distinctly conceived after the first bath. It seems also that the bathing of new-born children in ice-cold water is always connected with an expression of *displeasure*.

About the local sensation of warmth and cold, we have very little experience. Ganzmer tried the different parts of the body on twenty children with a cold piece of iron, meeting each time with vivid reflex motions.

The sensibility of young infants to any contact with cold water is known by their crying and restlessness; and this disinclination to the local withdrawal of warmth remains throughout the first years of life, until in later years the experience that cold water is refreshing overcomes the first impressions.

How sensitive children in general are in regard to heat and cold was shown in the experiment of lessening gradually the temperature of my child's bath. It could be lessened to $32\frac{1}{2}^{\circ}$ C. without diminishing the pleasure of the boy. But if it was lessened to $31\frac{1}{4}^{\circ}$ C. and less, the child cried uninterruptedly until the water was made warmer.

At two and one half years he laughed and enjoyed the temperature of the room in the bath, which before had made him cry; and at four years he refused to take a warm bath at 36° C. At seven months he looked pale in a bath at 34° or 35° C., but in one or two minutes he regained his usual color. This refers not to a direct contraction of the capillaries of the skin by the abstraction

of heat, but to an effect on the reflective nerves, as it was especially the face which became pale, but at two years this ceased.

The sensibility of the skin of the mouth, the tongue, and the lips in the young babe, in regard to cold and warmth, is also very striking. The bottle is very often refused, with violent crying, when the milk is only a little above or below the temperature of the blood. Therefore all liquids used to test the sense of taste must have exactly 37° C. But children can easily be educated to take cooler drinks, if they be offered when the child is hungry.

CHAPTER IV.

THE SENSE OF TASTE.

THE child of mature as well as that of premature birth, from one to two months, reacts by mimic reflex motions, like an adult, when, with the aid of a brush, different articles are applied to his mouth.

Some grimaces were observed on two children touched with some substances, while the same placed in the middle of the tongue showed no effect until the melting reached the more sensitive portion of the border of the tongue.

It is, therefore, but the taste, and no other associated effect, which produces a "sour face" of the child.

I saw my child, on the first day of his life, lick the sugar which was put on the nipple of his mother's breast, while he did not touch anything else than the sweet.

On the second day he licked the milk as well as the sugar with a very satisfied expression. Later, when presented with salt and other mixed substances, I observed his astonishment.

At one and one half years old, even to his fourth year, he closed his eyes, covered his face, and shook his whole body in the most comical manner, when presented with a

new dish, even when he liked it. And one could very easily make him believe that something tasted good, even when he had just rejected it. Prof. Preyer finishes this subject with the conclusion that the capacity of tasting is found in every child, but different individuals show different powers of conception and expression.

COMPARISON OF THE IMPRESSIONS OF TASTE.

The sense of taste seems the first and best adapted to receive and connect impressions. The taste of the milk he was accustomed to was strongly fixed, so that, when quite young, he was able to distinguish between his usual and other milk. *The opinion* of some observers, that it needs a month before a child is able to refuse medicine on account of the taste, is false. I found my child refusing milk and sugar on the fourth day which he had accepted on the second day, very likely comparing the sweetness with the mother's milk. But only a few grains of sugar put on the nipple of his bottle were enough to make it acceptable.

Possibly, in sweetening bad tasting medicine, the child takes it for the sake of the sweetness. Every new effect of taste acts in three directions, showing astonishment, a desire for more, or detestation.

Food is not seldom at the beginning rejected, then afterwards desired. This depends on the charm of

novelty, the taste, the touch, the temperature, and the smell. All four may act in concert.

But where the child has only to decide between something salt and sweet, the impression is quite clear, even when it is only a few weeks old.

How far the child is able to distinguish after he is weaned may be seen by the following:—

When one hundred and fifty days old my child would no longer take his mother's milk. Five days afterwards he refused the breast altogether, on account of the greater sweetness of cow's milk when boiled and thinned with water.

At the end of the twenty-third week a nurse was engaged for the child, whose milk he took with delight. Thinned cocoa, milk, beef-tea with the yolk of an egg, also milk with egg, were all much liked.

On the one hundred and eighty-fifth day no nurse was used. Boiled cow's milk, one part water, four parts with egg, seemed desirable. Also gruel with egg was received, then afterwards refused; also leguminose.

In the eighth month the child received almost exclusively "Nestles Kindermehl," which he liked the best. He cried aloud with pleasure, to express his satisfaction with its taste.

Ninth month. The child partook of some sugar mixed with a raw beaten egg, with great astonishment. He liked fresh water, and sucked with pleasure a piece of white bread, seemingly for the sake of sucking.

Eleventh month. He took some weak and slightly salted beef-tea with egg, without showing pleasure, and refused cocoa milk without sugar.

Twelfth month. The child was very fastidious about the taste of his meals, and refused with disgust any farinaceous substance, except his kindermehl.

Bitter substances were strongly refused. The idiosyncrasy, by refusing to eat a number of dishes, extended into the fourth and fifth years, and went so far that even on seeing some peas he expressed a strong aversion, which was followed by choking,—a phenomenon met in many children, indicating a very strongly developed power of discrimination between differences of taste and smell. Much as it seems practically opposed to a rational method of education, no child should be *compelled* to take nourishment which is averse to him, and may be followed by vomiting.

The refusal of small children to certain food must not be attributed to naughtiness. Does not the new-born child at once refuse sour milk? And at the to him critical period of weaning, is he or the nurse to blame when he refuses the indigestible food offered him? Very often force used at this time develops a *lasting distaste* for certain dishes, and, what is worse, a *lasting obstinacy and willfulness*.

By leaving the taste unsuppressed at the beginning, by constantly protecting him against taking too much, he will by degrees adjust himself to the family food.

But here it must not be forgotten that the family has already reached a certain indifference towards taste and smell, which the child has to acquire in the course of years.

The touch, as a reflex sensation for sucking by hungry babies, supersedes, very likely, the sensation of taste, and offers another sign by which to recognize the pleasantness of taste sensation. *It likes sugar, not the acid.*

Preyer then refers at length to the instinctive discrimination of taste in newly born animals, and says:—

These wonderful capacities can only be based on an instinct of taste. *Further experiments, especially on newborn human beings, are very desirable, to ascertain the successive accretions of the sensibility in discerning differences, both for pleasant and unpleasant differences of taste, and the characteristic reflex motions, caused by peculiar tastes, all of which must become the study of the mothers.*

Pure chemical substances, without smell or a pronounced taste, have to be used in moderate quantities for such experiments. The best, when dissolved in lukewarm water, are sweet glycerine sugar, and milk and sugar; for salt, common salt; for sour lemon, acid and milk acid; for alkali, soda; for bitter, quinine.

CHAPTER V.

THE SENSE OF SMELL.

THE observations on the sense of smell refer first to the proof of its existence in the new-born human being, and afterwards to the differences of the impressions of the sense of smell in the nursling, connected with some notes on the sense of smell in new-born animals. On the first day the child can be induced to mimic motions by strong smelling substances. Kussmaul ascertained that when the odor of asafœtida or of coal oil was communicated to the nose of a sleeping new-born babe, it would close the eyelids tight, wrinkle the face, and become restless and awaken.

Leutzner claims that healthy children begin to cry when exposed to strong unpleasant odors placed on their lips. Prof. Preyer says these experiments were not exclusively directed to their sense of smell. The proof of the existence of the sense of smell in the new-born babe would have been explained by a mother's consenting to wet one of her breasts or the sucking bottles with an unpleasant smelling but not tasting substance; for instance, kerosene oil, *eau-de-cologne*, spirit of wine, etc. If the child refused to suck from one of these sources of

milk, we might be sure he possessed the sense of smell. A little girl eighteen hours old refused the breast decidedly, on the nipple of which was placed a drop of petroleum or oil of amber. It would be very useful to repeat such experiments, as the observation of a nursling who refused the mother's breast on account of smell was not a newborn babe. The fact that some larger babies, after having tasted their mothers' milk, refuse to take anything else, in spite of hunger and thirst, is not a proof, because it is not exclusively founded on a sense of smell. On the other hand, Mr. Kroner has fully proved that from a quarter of an hour after birth to a few hours or days afterwards, a normally developed child smells by curling up its nose, wrinkling up its face, etc. In all such experiments with the sense of smell of infants, it must be ascertained that the nasal passage be entirely free to the air. The child must be able to breathe with a closed mouth.

After the sense of smell is awakened, it serves the child greatly in the choice of its food. Not, as some claim, after four weeks, or after two months old, but from the *first day* the sense of smell is active, increasing from day to day the intensity of the child's pleasure or discomfort. Some children a few weeks old refuse the breast of the nurse on account of the unpleasant odor, and cry when the breast is merely brought near to them. There can be no doubt that children born blind very soon learn to smell their milk or mush. And

the refusal of cow's milk instead of the previously received breast milk depends more on the smell than on the taste, as children often refuse the milk before tasting it. It would be interesting in such cases to blind the eyes to prevent the sight from sharing in the result.

The blind-born babe undoubtedly cultivates the sense of smell equally strong with that of taste, in order to regulate his food.

Whether the babe recognizes his mother's breast by the smell, as the animal does, is not certain. It seems that without seeing or touching it, the child would be incapable of finding it. Also, the search for the nipple, without any aid from the sense of smell, as with animals, seems, according to my observations in lying-in hospitals, questionable.

That children move violently and hastily with their whole heads around the breast, eyes wide open, and the mouth intermittently so, I did not observe in my child before the eighth day.

After weaning, the sense of smell is the least used for the perception of his surroundings. Impressions of smell are ordinarily taken for those of taste. The following notes on my boy's actions will show how late the conception of smell was clearly developed. At fifteen months, freshly ground coffee and *eau-de-cologne* did not make any impression on my child, though he liked the latter very much at three years of age. They

were neither desired nor rejected; if placed under his nose, his mouth closed.

At the end of the same month, *eau-de-cologne* made the child laugh. He showed similar pleasure in regard to the other senses. At sixteen months old, the smell of the oil of roses made no impression; at seventeen months, the capacity to discriminate between taste and smell was still doubtful, because every time I attempted to have him smell an object, as a hyacinth or some essence, he opened his mouth, and often took the flower into his mouth, thereby supposing that anything smelling good must likewise be of good taste. At eighteen months, the child placed the things which he liked to smell, and desired to smell no longer, in his mouth, showing that discrimination between smell and taste existed.

I gave the child a rose, saying, "Please smell"; he would carry it with closed mouth to his nose, breathing in the fragrance with several inhalations. For a long time the word "smelling" was identified with the word "blowing," because the nurse, to indicate smelling, imitated sneezing. A true sniffing, that is, an inhalation of air, was never carried out. As the experiments of smelling in general are not customary, and the little babe often smells sour himself, and has very little opportunity to smell anything except the exhalations of his mother or nurse, the late development of this sense is not surprising.

The importance of this function, in connection with the test of fresh air, food, and cleanliness, is unfortunately *generally undervalued*.

Many adults are totally ignorant of a difference between the smell and taste. The man of culture grows up without any instruction, though it would be of great value to develop the sense of smell early, and get a clear expression of the effect, in the same manner as practiced with color and sound.

THE SENSE OF SMELL IN NEW-BORN ANIMALS.

Mr. Spaulding stated that in placing his hand, with which he had just petted a dog, near four little kittens, only three days old, and still blind, they hissed; showing the finely developed sense of smell. In man, the instinctive smell is less inherited, as it plays altogether a less important psychogenetic role than with animals, that depend on it.*

* The savage stands in this respect nearer to the animal.

CHAPTER VI.

THE EARLIEST PERCEPTION OF COMFORT AND DISCOMFORT, AND THE DEVELOPMENT OF EMOTIONS.

PROF. PREYER says: "The physiological conception of the condition of the organs and emotions is so little decided, that the investigation of them on a little child seems almost seeking too far.

"I therefore limited myself to a small number of sensations and emotions, and therewith present merely fragments. It seems better to communicate them than withhold them, if they should only serve to show how many problems grow out of the facts.

"The whole mental and physical condition of the child depends pre-eminently on his emotions of pleasure or pain. I refer, in general, to these at first; afterwards, especially to the feeling of hunger and satisfaction, and of weariness. Of the emotions of the very young child, the sensations of fear and astonishment are of great importance."

EMOTIONS OF PLEASURE IN GENERAL.

In the first three months of the child's life the sensations of pleasure are not manifold. With the exception of

hunger and the repeated satisfaction by sucking, and the sweet taste, there is also in the first month, dating from the first day, pleasure in its first bath. Less intense, but constant, is the pleasing satisfaction in impressions of light, and later in objects slowly moved before its eyes.

The pleasure in these impressions, which grows steadily, finds its climax in the freedom from outer bandages of clothing, allowing untrammelled use of his limbs. Acoustic impressions are perceptible in the child at two months old. Singing, playing on the piano, and the use of harmonious sounds in quieting discontent of the child, produce lively demonstrations of pleasure. The same effect is reached by speech. The large oval of the face moving before his eyes — speaking, laughing, and singing — quite early excites the attention and pleasure of the child, by its peculiarity and difference from all other objects, though *human beings* may not be considered capable of recognizing the mother before three months of age.

At four months, the grasping after everything increases, becomes distinct in the fifth, and increases greatly in the sixth month. The loud impressions of pleasure, when carried into the open air, may be referred to the increase of light and fresh air, more than to the sight of trees and houses.

Seventh month. Its own picture seen in the glass, in *one* case at least, excited pleasure. Animals and watches excite the pleasure of the child more at this age than before. A new sensation of pleasure, with a shade of

intelligence, is shown by the attempt of the child to change effects by its own activity; in its voice by crying out in different ways, and making its first baby sounds, changing its first play motions; and at five months, the rumpling of sheets of paper awakened very great and lasting pleasure. The tearing of newspapers and rumpling them up into little balls furnished him from five months to three years of age an immense deal of pleasure. Similar pleasure he derived from the tearing and the wearing of a glove (from the fifth month to the fourth year), also from pulling at my beard; later, the continued tinkling of a bell and the movements of his own body; the pushing in and out, or cutting with scissors, when two years of age.

Finally came the power of imitation and ornamentation, which gave life and form to the pieces of wood, turning leaves into delicate dishes, etc. On the whole, it seemed clear that playfulness was more the result of putting aside unpleasant conditions, than of creating directly pleasant ones. Hunger, thirst, wet, cold, when done away with, excited feelings of pleasure, which were stronger or weaker as the subdued lights, slowly moving tassels, lukewarm bathing, kindness of the parents singing, affected the mood of the child.

In the second three months, some entirely new and joyous pictures connected themselves with the first successful graspings.

The voice in the first days was very different when

pleasure or hunger was expressed; and high crowing sounds were signs of joy observed by me from the fourth month, and the fourth year showed very little change in this respect.

Near the end of the first year, the child enjoyed an especial acoustic plan of grunting, very likely produced by the vibration of the uvula with closed mouth. It was produced in anticipating pleasure.

DISPLEASURE IN GENERAL.

In the first half-year, feelings of discomfort were greater than later. Even in giving the greatest care in ventilation, regulation of the temperature of the air and the bath, in controlling influences on the mother's milk, and in having the most pleasant surroundings at command, it was almost impossible to keep the baby in perfect health. Even the birth may have been painful to the child, leaving it with ailments, and the number of children who have painful diseases is numerous.

At no age is mortality greater than in the first year. This disposition to sickness in the helpless, defenceless, and inexperienced nursling must bring it many uncomfortable hours, as only a *healthy organization is capable of enjoying untroubled happiness.*

But it is not our aim to refer to those discomforts connected with sickness, but to those from which we can free even the most healthy or poorest. They are hun-

ger, thirst, uncomfortable positions in lying or being held, cold, wet, impure air, the pains of teething, unpleasant dribbling, sucking objectionable objects, and later the refusal of desired objects.

It is utterly wrong to imagine the child unable to feel discomfort. Those who are capable of enjoying-themselves are capable of suffering in the same degree. Continued crying is the most telling of its conditions. In pain, the child uttered *piercing cries*. He *whined* when in uncomfortable positions, *cried very loud and continuously* when in a cold bath, *strongly* and with interruptions when hungry and expecting to be satisfied.

Some articulate and inarticulate sounds of discomfort were heard. The child can only cry; and at the beginning may not be able to *perceive pain* fully, as new-born infants resist more slowly the strongest impressions.

A second telling sign is the closing and pressing of the eyes, not often met in adults. In the first year the child closed his eyes regularly when crying. At nine months old, he closed his eyes, wrinkled his forehead on being compelled to suffer; for instance, being dressed, or when a finger was put in his mouth. The turning of its head was perceived from the first to the ninth month without crying.

But the most sensitive indicator of the feelings is the mouth, as the slightest discomfort was at once expressed by the drooping of the corners of the mouth.

This facial change grows more prominent with advancing age. With my child, the action began in the eighteenth week.

At twenty-three weeks, when spoken to harshly, with a severe expression, the drooping of the lips preceded the most pitiful crying, accompanied by the naso-labial fold, but was changed as soon as I looked kindly at him.

Darwin saw the drooping of the corners of the mouth as early as the sixth week. This shows a difference in children; but from the third month every unpleasant feeling was expressed in this way.

From eight months old, or later, the child added to his loud crying at times by a perfect, square opening of his mouth, which Darwin recognized as the height of satisfaction.

In spite of these signs, it was especially difficult in the first year to comprehend all the causes of crying and discomfort.

For instance, why did the little girl of four months cry, when her mother approached her with a large hat on her head? And why did she smile when she took the hat off? Very likely fear and astonishment were mixed, as they are with animals. I had an excellent horse which knew me very well, but began to tremble and shy once when I knelt down to shoot a bird. Surely this was fear, because his master appeared to him changed. The young child cannot understand the

change of a personality of which he has a different picture in his mind. Children who were accustomed to kiss hands, turned away when these hands were in black gloves, or cried if a person was dressed in black. Cutting some figures out of paper, my boy twenty-seven months old would cry for pity, when one of them was injured by cutting a foot or an arm off. The same was told of a little girl.

If the nursling, in spite of being rightly fed, warmed, and cared for in every respect, cries, closing its eyelids tight, and dropping the corners of its mouth, and cannot be pacified in any way, we must seek for an *inner, unknown* cause. Once, in a similar case, I let my boy cry for about twenty minutes, until he went to sleep, and when he awoke, after several hours, he was perfectly contented. Sometimes this crying is the result of bad humor, and sometimes only a notion, without any suffering. With some it comes from *sleepiness*; and with others, from *OVER-FATIGUE*, or, after nursing, when prevented from sleep. The dull glance of the eye, the slow movements, the facial expression and paleness, are symptoms of disturbed health, as seen in the chimpanzee and ourang-outang. The drooping of the corners of the mouth is, in all cases, even when in sleep, the surest sign of an unhappy condition of mind.

THE FEELING OF HUNGER.

Soon after birth hunger and thirst are felt by the child. They are to be recognized by the child taking objects into the mouth to suck, while *the satisfied nursling never sucks*. Too long left *unfed, the child begins to cry and becomes restless*; this disappears during the first days if anything is put into his mouth, though in a week this experiment no longer succeeds, showing the child's experience. Another expression of hunger is the wide opening of the eyes when brought in contact with the breast before taking nourishment. This was repeated regularly in the first weeks, but not before he had taken the breast several times, proving it to be the result of experience. I also saw the hungry baby moving his head (an act peculiar in new-born children), even when the stopper of the bottle was brought near his lips; this movement finally ceased at one to two months old, when the stopper was repeatedly taken out of his mouth and replaced again, the child seemingly becoming aware of its uselessness.

Though these movements disappeared after a time, the animal-like greediness for food is increased. At six or seven months old the eyes were wide open, observing the continued decrease of the milk in the bottle; and at six months he turned his head energetically toward the bottle, violently crying when it was taken from the room.

At eight months one could divert the attention of the child from taking his food, by noises or movements,

hunger not merely conquering all other feelings, owing to the larger quantity of food the child was able to take. The smaller the stomach, the oftener it was empty; the larger it grew, the more it contained.

The stomach of a new-born child contains from 35 to 43 cubic centimeters; after two weeks, 153 to 160; after two years, 740 cubic centimeters, though there are individual differences. For this reason, the intervals between meals are extended, leaving time to direct his attention to other things, and the less he sleeps the more slowly he consumes his nourishment.

In the tenth week he awoke and was hungry three times from 8 P. M. to 6 A. M. In the thirteenth week the intervals lasted in daytime three to four hours, instead of two hours, as in the beginning of life. At the eighteenth week, and even before, ten and eleven hours were spent in uninterrupted sleep and without food. There exists, of course, many individual differences.

If people occupy themselves too much with the child, thereby affecting his senses, or if his attention is too active, the child will express hunger by crying, even when playing. This often makes crying from hunger with crying from discontent a miscomprehension. I noticed, after the sixth week, my child made, when hungry, a peculiar gurgling sound,—as when his food was held before him, but kept back on account of being too hot. It is impossible to believe that, in spite of the strong desire for food, the child wished to get it by inde-

pendent movements. I observed a child that refused decidedly to take the left breast on the fourth to the sixth day, though it had been without food for seven hours, because, though the milk was equally good milk, the breast was less comfortable to reach. His hunger was great; but as his experience in taking the left breast had been unsatisfactory compared with the right side, he refused it. That this could be already conceived on the fourth day of life was very remarkable; also his persistence, in spite of all possible efforts.

THE FEELING OF SATISFACTION.

The reverse of the expressions of hunger are those of satisfaction. The same food which was accepted and craved, was despised when hunger was gone. The satisfied child literally rejects the breast and the bottle. At seven months, I saw the mouth-piece of the bottle rejected with disgust, and the head emphatically turned to the other side.

On the tenth day and later, I observed after his meal some smiling opening of the eyes, and the production of articulate sounds, each one telling of satisfaction and comfort. But I doubt whether the child feels any high degree of disgust as regards want of cleanliness, or from bad odor.

THE FEELING OF FATIGUE.

Notwithstanding his general sleepiness, it seems doubtful if a child can be much fatigued, since he makes very few efforts. But a closer insight will show that immediately after birth, causes of fatigue are experienced, and thus physiological sleepiness is a necessary result.

To be awake, a certain excitement of the sensory nerves is absolutely required. The less excitement, as before birth, the sounder and more prolonged the sleep. After birth, the increase of nervous activity—for instance, the simple opening and closing of the eyes, and the activity of the skin—interrupts sleep. The longer the interruption lasts, the greater is the consumption of forces of the central and peripheral parts of the sensuous organs and of the muscles, by oft-repeated and strong contractions, which do not take place in sleep. This consumption of active force destroys the power of keeping awake, in having abstracted from the blood the needed oxygen.

The muscular contraction exerted by the crying and nursing child creates a need of sleep. The cry of the hungry child is a sign of being awake, which quickly turns into sleep, sometimes before being fed. Insufficient nourishment in the breast *very often leads to sleep before hunger is satisfied.*

The fatigue of the senses also produces sleep. At two or three weeks old, the attention directed to some-

thing besides nourishment — for instance, changes of surroundings, effects of sounds and light — makes the child sleep, especially *if he becomes a plaything for the family*. The hearing of the piano gave my boy at eight weeks old a six hours' uninterrupted sleep; no sleep had ever lasted so long before.

Prof. Preyer says that in addition to the consumption of oxygen and the moderate energy of the breathing apparatus with the small amount of blood, there must be a special cause to promote the sleepy condition of children, who sleep normally during the greater part of their lives, until they are two years old.

He also says that the milk and its whey easily send to sleep babes and adults, and that mothers' milk contains these elements; and finally, that the process of digestion concentrating the blood in the digestive organs probably consumes the quantity of blood which would be necessary for wakefulness.

With this hypothesis corresponds the general experience that the first three months, the duration of sleep between two meals is a great deal shorter than in the following three months. This depends on the size of the stomach. I found the sleep of the nursling so much more sound and extended, the more concentrated the milk became. Plenty and good milk of the mother gives a sounder and longer sleep than the diluted milk of the cow, or the scanty milk of the wet-nurse. But even under the best conditions, the first week's du-

ration of sleep is shorter, and awakening more frequent than later. The frequent awakening results, besides from hunger, from the greater uncleanness produced by the wet-nurse and skin irritation.

Preyer then refers to the notes he made on the decline of sleep observed in his boy from the first day to the end of three years. The first month uninterrupted sleep did not last longer than two hours; out of twenty-four hours, at least sixteen were spent in sleep.

The second month, sleep lasted three hours, sometimes even five and six hours.

The third month, the sleep lasted sometimes five hours.

The fourth month, the sleep lasts five and six hours, once even nine hours, the interval for nourishment three or four hours, against two hours previously.

The sixth month, six and eight hours' sleep is not seldom.

In the eighth month, sleepless nights on account of teething.

In the thirteenth month, fourteen hours' sleep daily, in several intervals.

In the seventeenth month, he slept through ten hours without interruption.

In the twentieth month, the sleeping during the day was reduced to two hours.

From the thirty-seventh month on, the sleep lasted

regularly eleven and twelve hours, and no sleep was needed in the daytime.

From the fourth year, the time of wakefulness precedes that of sleep. Fatigue does not immediately produce sleepiness and sleep. This depends on the manifoldness of nourishment, but chiefly on the extended capacity of the breathing apparatus, the blood, the muscles, and the ganglion cells.

So the need of sleep is partly due to the greater variety of food.

I consider it of great importance not to interrupt the sleep of the child. Sometimes the awakening may lead to fright, trembling, and convulsions, even in a healthy child. Any emotions of fright are an injury, and any threatening words, as, "*The black man will be after you!*" or an *unexpected catching or throwing something at the child, is dangerous*. Older children and sometimes nurses will play these tricks. *They lead to fear, as do the telling exciting stories and silly fairy tales, which develop a sickly sensitiveness.*

It depends entirely on the treatment, at what period the child expresses fear. But there exists also inherited fear, which is demonstrated as soon as the first occasion offers. Why is it, for instance, that many children fear dogs, pigs, and cats, before they know anything of their qualities? One little girl cried at fourteen weeks for fear of a cat. Some children cry on hearing thunder.

It is a question in how far conception of hunger,

remembrance of pains after a fall, and unpleasant feeling occasioned by noise, are motives to express fear. I noticed that my child at two years old cried very bitterly when a heavy piece of furniture was moved. Such facts are altogether excluded from the expression of fear in animals.

Prof. Preyer refers at length to the effects produced on young chickens and the mother hen, by letting a hawk loose. They all showed the usual fear. A pigeon which he let fly over thirty-three young chickens did not affect them. At the same time, a hen that made a great noise did not disturb them. This proves that the enemy must have been known by inherited memory. Fear and courage are differently divided among animals of the same kind.

It is the same with the child who shows fear before he is aware of any danger, and before he can have been influenced by mother or nurse.

It is wrong to say that a child kept free from fear does not know fear. The courage as well as the fear of the mother has considerable influence on the child, as courageous mothers have courageous children and *vice versa*, but there are so many exceptions that we are obliged to look back to inherited qualities.

Champnay observed that his boy, nine months old, showed the first sign of fear by crying bitterly, and directing his wide-open eyes to one corner of the room whence he perceived an unusual sound.

One month after, a toy was given him which made a squeaking noise; he cried at once and repeatedly until he became acquainted with the toy, and learned to play with it by himself.

My boy, though not of an especially fearful nature, as proved by his romplings with older children, when by himself showed fear of machines and little animals. Surely this was not from experience.

At nine months old, I observed the first loud weeping, and turning away from fear, when a little dog barked at the nurse who held my boy in her arms. The same was repeated when seventeen months old. At the thirtieth month the fear of a dog was surprising, as he had never been bitten by a dog, and as far as could be learned had never seen a dog bite.

At thirty-three months, this loud crying was repeated when even a very small pug dog came near him. After this, this fear was overcome, and I once saw him take an apple from the mouth of a dog.

In order to give the child of two and one half years a special pleasure, he was shown a number of little pigs. Even the first sight of them made him very nervous. But when the little things began to suck, the mother lay down quietly, at which my boy began to cry aloud, to hold my arm, and to turn away in fear; the child thought the little pigs were biting their mother. His fear was still more surprising, as the pigs were enclosed by a high wall.

At four and five years of age this fear was so great that he cried almost all night, imagining that the pig was bitten. He saw the animals in the room, and even when it was lighted up he could not be quieted. Preyer says "that if children cry before sleeping, thinking that they are bitten by a dog, any sudden shock of their arms or legs makes them believe the animal had been really there. But if the quietly sleeping child cries out, 'Go away, pig,' without awaking, it seems probable that the child is dreaming. A little girl feared a dove when eleven months old, and not until fourteen months old could the fear be overcome. The fear of black-dressed persons of a deep voice, of masks, existed from the seventh to the twenty-fourth month; while the nursling of three months does not show any fear. A great difference exists between fear of punishment and natural fear. A disobedient child, acting for the first time against well-known rules, neither cries nor trembles; does not cling to persons, does not squat down; but keeps away. Though the fear of punishment may descend from generation to generation, it seems to be a new acquirement in every child. The fearlessness with which my child moved in any dark room I explained from the fact that it never had been put in a dark room. How the symptom of fear, 'the trembling,' is developed, remains unexplained. Darwin says: 'Small animals do not tremble; but newly born babies as well as children tremble, as seen by a baby one fourth of an hour after

birth, which was healthy, and for which a proper bath was prepared in a warm room. Animals often tremble in warm beds. No animal knows fear of the human hand at the beginning of its life. The chicks from the incubator act very differently on the first and second days of their life than they do later on, when no one can catch them. Dogs are fearless till they are whipped. How inherited fear assimilates itself with experience, is at present unknown."

Remarkable in the same degree was the fear of falling down on first attempting to walk; although no one remembered having seen the child fall. Fourteen months old, it did not dare to walk a single step without support. The child had hurt itself frequently, but here it cried from fear without having been hurt by falling. When sixteen months old, I frightened my child, when I hoped to give him extra pleasure, by producing a certain sound in pressing a finger hardly around the upper edge of a glass; while the clinking together of two glasses gave him much pleasure.

This may have been the result of want of knowledge, but the same child laughed at lightning and thunder, eighteen and nineteen months old; and at thirty-five months it imitated the zigzag of the lightning.

Twenty-one months old, my child showed great fear when his nurse carried him near the sea-shore; he began to whine (since the third month he had begun to weep), and I saw him clinging to her with both his hands,

even when there was no wind or tide, and hardly any ripple of the waves. Why, then, this fear of the ocean, of which the child knows nothing? It had seen and passed the channel of the Eider and the Rhine, and no fear shown; neither was it the vastness of the water, as this happened near by the shore. Could it have been aroused by some noise heard before? But fear of man by animals is unquestionably the result of man's actions.

Two conditions are needed to become fearless: either ignorance of danger, or habit of it.

ASTONISHMENT.

It is difficult to decide when a human being is for the first time astonished. Reflex motions of surprise are not identical with astonishment; even the concentration of attention directed by the child to its fingers, the unsuccessful grasping and handling of objects at the fourth and fifth month, differs from astonishment. At the twenty-second week I was fully able to differentiate astonishment. The child was in a railroad car. When I returned, after a short absence, hearing my voice and seeing my face suddenly, for more than a minute it looked at me with open mouth, hanging jaw, and wide-open motionless eyes, and such general motionless attitude as is typical of the expression of astonishment. The same was repeated at the sixth and seventh months, when strangers entered the room. They were repeated at the eighth and ninth month, with optical or acoustic

impressions, or by new experiences in taste and smell. I did not perceive any lifting of the brows, but I may have overlooked it; sometimes the sound "ah" was heard, moderate impression by repeated lifting and closing of the eyes, though not the mouth. The second year these symptoms of astonishment were quite seldom; the whole process is original, neither acquired by imitation nor by training. The utter motionlessness, after a strong and sudden impression, is similar to the catalepsy in animals, which lose utter control of the will when frightened. (See Preyer's "The Catalepsy of Animals," Hypnotismus, Jena, 1876.)

It is not seldom we see animals evidently astonished; for instance, a dog observing the flame in a stove. A certain dog was afraid of thunder; and once, when he heard a similar noise produced by putting some apples in the garret, he was led to see his error, and subsequently paid no attention to thunder.

Horses shy at objects by the roadside, as long as they are uncertain what they are. In all cases, with animals as with children, want of knowledge creates fear, while the appearance of novelty creates astonishment. In the first case, fear disappeared in astonishment on learning the cause; in the second, fear and astonishment stand equal; and in the third case, there is first astonishment, and afterward fear, from want of knowledge. If children were compared with young dogs, in many respects they would be found to act in a similar manner.

CHAPTER VII.

GENERAL CONCLUSIONS.

It is very difficult for the adult man to put himself into the condition of a child that has not yet had any, or at least no distinct experience; for after the first periods of growth, every experience makes undoubtedly an organic change in the brain; leaves behind it, as it were, a sort of scab or trace. The condition, therefore, of the sensorium of the new-born child, which is stamped only with the marks of the experiences of past generations, and quite untouched by individual impressions, can only be conceived of by the help of the imagination. The mental condition of every man is so much the product of the experiences through which he has passed, that it is quite impossible for him to conceive himself apart from these.

Still, on the ground of the facts set forth in the previous chapters, I believe I can present something as probable. And first, of the sensuous activity, we say, that it is in the highest degree probable that before birth no sensation of light, no phosphorescence, occurs when the nerve of sight or the retina is pressed or extended, though immediately after birth, light and dark are distinguished.

Before birth there is surely no sense of smell, but the

infant in the first hour of his life is sensitive to strong odors. Undoubtedly, no man can hear before his birth, but a few hours afterwards (with animals in half an hour) reflex motions were regularly observed by me in response to loud sounds. A sense of taste, in the proper significance of the word, the child can hardly have before birth, though immediately afterwards he acts differently towards very bitter and very sweet substances. There remains only the sense of feeling, which, in the fœtal condition, is probably active. Still, the unborn man is doubtless not in a condition to distinguish warmth from cold. These assuredly — for general feelings cannot have been developed — are only sensations of touch which the child has experienced before he enters the world.

The following examples will indicate the course of development of the separate senses. During the first week of its life the human child cannot see, in the proper sense of the word. At first, he distinguishes only light and dark, noticing only the rapid changes from one to the other, as when a large portion of the field of vision is illuminated or shaded. But if a spot of light is very much brighter than the surrounding space, as when a candle is seen in a dark room, then, even in the first week of the child's life, the spot, though small, is distinguished as light.

The distinction of colors during the first month is very imperfect, and is perhaps limited to the recognition of different degrees of light. Yellow and red,

white, gray and black, are first sharply distinguished, and only much later green and blue. Probably, the one-year-old child still perceives green and blue almost as gray; at any rate, they are not so well defined as they become later. Hardly ever will a child before the end of his second year name rightly the above-mentioned ground colors; and even so late as the fourth year these are named and recognized much more readily than the compound colors, by every normal child, who has not had a special education of the color sense. Rapid winking at the sudden approach of an object before the sight, which is a reflex movement analogous to the act of drawing back, is absent during the first week, and only arises after an unpleasant sensation has been experienced on account of the sudden change in the field of vision, which at first was not noticed. Therefore, the quick opening and shutting of the eyes after the second month are an indication of the full development of the power of sight, that is, the power to distinguish rapid movements. It is generally true, also, that the eyes are more widely opened when the impressions and conditions are agreeable than when not. The movements of the eyes in the new-born child are not, as later, co-ordinated and associated, but at first extremely irregular. It often happens that in the many unordered movements, both eyes are turned simultaneously to the right or left, up or down. These movements of the eyes, which are at first rare and not quite symmetrical,

become soon more frequent and quite symmetrical, and supersede, little by little, as sight becomes more exact, the irregular movements. The power to fix the sight upon a neighboring object, and observe it exactly, develops slowly. At first, the child stares into the empty space. Next, it turns the eyes often from an object before them, as, for instance, a face, to some bright neighboring object, for instance, the flame of a candle, and stares upon it. Afterwards it follows a slowly moving object with the eyes and head, or with the eyes alone. At length the child no longer stares, but looks and finally observes. Then the eye begins to accommodate itself to distance. Objects at different distances at first swim vaguely before it. Now it observes them exactly one after the other. The contraction of the pupil and convergence of the line of sight now take place for the purpose of beholding a near object; though at first such contraction, though produced by the increase of light, had no connection with the act of observation or with convergence. Convergence and expansion of the pupil might even take place together. With convergence and binocular observation of a slowly moving object, the child's expression becomes intelligent.

Last of all comes to the child, and only gradually, the power to know what it sees. Transparency, reflection, shadow, are for years a riddle to the child, and become intelligible only after often-repeated observations. The thickness of the object seen is long unrecognized, and

the distinction between the third dimension of space and the other two (the transverse and vertical) is for a long time only imperfectly perceived. The failure to grasp an object proves how incomplete, even in the second and third years, is the power of estimating distances. The false interpretations made of impressions of sight, as, for instance, of steam and flame, show that the child only slowly learns to abstract. Nevertheless, the power is early developed of recognizing objects and persons as such. The theory of space perception follows from the fact that man is not provided immediately after birth with a ready-formed mechanism, which requires but the reception of light to put into regular activity; but the light itself creates that mechanism. Therein the empiric theory is right. Only the capability is present at birth, not the whole apparatus. This, however, is not universally true. With man it is so. Many animals can see at birth, as the chicken and pig. Others come into the world with the complete mechanism for the perception of space, needing only the reception of light in order to work as perfectly, or nearly as perfectly, as in the full-grown animal. In this case is the possibility of a greater perfection of sight in the individual at the first, as it appears, precluded. The chicken just out of the egg, that unfailingly picks up the kernel of corn, does not learn to see any better by repeated acts of sight. Man learns day by day to see better, and even in late life, he can, by much practice, perfect

his seeing apparatus far beyond the ordinary measure. The mechanism of sight is with him still plastic. It can still be much differentiated, because at the moment of birth it is not so much developed, so determinately formed, as with the bird.

Hearing with the just-born child is so imperfect that he must be called deaf. So all mammals immediately after birth are incapable of responding to impressions of hearing. The causes of this peculiarity are in part external. Until the animal breathes, air is wanting in the middle ear. The external approach is not penetrable, and the drum stands too obliquely.

Even after the passages of the ear are open, four days or more after birth, there is no distinction of sounds. Before the end of the first week, however, with normal children, the characteristic winking is observed after any sudden loud sound. The starting of the child after loud sounds, which continues many months, proves the growth of power of hearing. Though in the first month of life, single hitherto unperceived sounds come to be distinguished as different, as, for instance, deep and high voices, z and s sounds, singing and speaking, yet three fourths of a year at least pass before the child recognizes the tones of the scale; and it is questionable if it can even learn rightly to name C, D, E, F, G, A, B, before the end of the second year. Many children, however, learn to sing before they can speak, and all can distinguish the sounds and harmonies of language long

before they themselves can produce them. The strength of impressions of sounds can be recognized by an attentive observer, by noting the greater or less response to them, even in sleep. The child already perceives the direction of sound in his second or third month.

The great superiority of the ear over the eye in a psychogenetic relation appears little indeed in a superficial observation of the child who yet does not speak. But we have only to compare a child born blind with one born deaf, after both have enjoyed the most careful education and the best direction, in order to convince ourselves that after the first year, movements of the nerves of hearing bear much more upon spiritual development than those of the nerves of sight.

Moreover, many mammals and birds are born into the world with a much more developed, a much more correctly working apparatus for hearing than man, and which far surpasses the human child in the perception of tones, strength, and direction of sounds; but no animal possesses an organ of hearing capable of developing so fine a power of differentiating sounds. None, however, respond in any degree so precisely as the child to the fine differences in strength and kinds of sounds which are found in human languages.

In the first hour of life the sensation of touch is much more slight than later. Sensation of temperature does not yet exist. Pain is felt only when excessive.

Of all the senses, taste is the first developed, as it is in

animals. Although at first incapable of smell, the child is *soon able to distinguish between the different kinds of milk*. The child's feelings are, at birth, not very varied, because the brain is as yet inactive. The repetition of feelings opposite in character produces memory, power of abstraction, judgment, and inference. Astonishment, and fear, which is akin to it, are powerful factors in the incipient development of a child's intellect. The desire of what once caused pleasure, produces gradually the power of will.

DEVELOPMENT OF THE POWER OF WILL.

An act of will is only possible after the child's faculties of conception have been developed. Repetition of comparison between a desirable or undesirable sensation, must have led to a perception of differences before an act of will can be performed. Consequently, the newly born child has no will, as it is without experience of comparison, which a human being has gained by acting according to his will, which finally regulates his conduct. To understand the very slow progressive changes from one mental condition to another, we have to consider them in their gradual steps, like a slowly moving stream. It is, therefore, our duty to observe those movements and that period in which we know man void of will, and to note the time when he may present an act of will in its most primitive stage. The second part of this book refers to those movements which are connected with the formation of will.

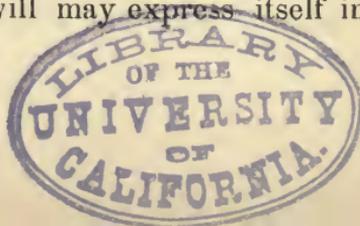
CHAPTER VIII.

MOVEMENTS OF THE CHILD AS EXPRESSIONS OF ITS WILL.

It is only through movements that the will can be directly recognized. The possibility of recognizing the gradual development of will in the child must, therefore, be gained through observations of his manifold motions.

RECOGNITION OF THE WILL OF THE CHILD.

However different may be the manifestations resulting from the power of will, all expressions of will are principally perceived by motions, such as words, actions, facial expressions, and gestures. Yet not every sound, nor action, nor expression, nor gesture can be called the result of an act of will, because a sleeping person speaks, and the somnambulist may accomplish many acts unconsciously, and facial expressions may be performed without will by artificial electric sensations. The nursing produces gestures and facial expressions, the meaning of which, as an expression of will, seems unknown to the adult. On the other hand, it is decidedly accepted that these acts under normal circumstances give proof of a development of will. After the first period of development, the power of will may express itself in



the negative, by suppressing certain movements. No one doubts that a human being is capable of expressing his will indirectly by keeping silent or giving the least expression in face and gesture. This is a mere negative act of will.

The four following characteristics enable one to distinguish an act of will: —

(1.) Every intended motion is preceded by conceptions, one of which especially possesses motoric power as a cause of motion.

(2.) Every intended motion is, to the one who executes it, generally and specifically known.

(3.) Following a more or less clearly conceived aim, the action may finally,

(4.) Be checked in the very first moment of the impulse of will by new conceptions.

Every movement to which these four distinctions are not applicable is unintentional. Therefore, all muscular movements of man must be recognized as acts with will or without will, as *intentional* or *unintentional*.

The will arises not out of nothing, nor has it any previous existence, but is developed from those impulsive desires consequent on sensations, and later on conceptions. It is not *innate*, but *inheritable*. The variable excitability of the central motor organs, and the original (impulsive) movement connected therewith, which adults designate as desires, are the first germ of the will. In order to ascertain with certainty at what time the will

makes its appearance, it is requisite to examine whether any new movement, as, for instance, the first extension of the hand toward some objects noticed, be accidental, or intended; that is, whether the desiring as well as the grasping child knows the movement, and its end is really represented to him; but then, even, it is not yet necessarily voluntary, which it is as soon as it can be restrained, as, for instance, by the representation of unpleasant consequences.

Four distinct kinds of movements are to be noticed, namely, the impulsive, reflex, instinctive, and intended movements.

CHAPTER IX.

IMPULSIVE MOTIONS.

PREYER devotes this chapter, from which only short extracts are made, to the opinion that a characteristic mark is wanted by which the movements of the extremities of a newly born child should be at once recognized as instinctive and imitative movements. "They are reflex," he says, "in the movements of the arms and legs, as a result of peripheric irritation before and after birth." Asking, "When is the first motion of the embryo accomplished?" he points to the chick in the egg, which moves on the fifth day, and shows the similarity between this and the human embryo. "Impulsive motions are not instinctive, because they are used aimlessly and without advantage. They do not exist in the young child because of the lack of emotional conditions on account of the incomplete mechanism of the brain." Referring to the difficulty of solving these problems, he speaks of the works of Alex. Bain, and his own treatise on "Psychogenesis," 1880.

He says: "Purely impulsive motions are those which start directly as contractions of the muscles from motoric centers." They are not numerous, and are as follows:—

- (1.) The stretching of the arms and legs.
- (2.) The movements of the eyes, also the snoring.
- (3.) The manifold movements of the nursling in bathing.
- (4.) The expressions met in sleeping babies.
- (5.) The cooing and crowing.
- (6.) The sympathetic movements, illustrated by imitating different sounds, music, etc., by copying the peculiar manners of others; in short, everything that reaches the sphere of their wide-awake interest.

CHAPTER X.

REFLEX MOVEMENTS.

FACTS proved in my examination of the embryos of many animals show that, in spite of even the strongest and most varied irritations at the earliest stages of development, no reflex motions can be produced, though motions of bending and stretching the trunk are regular. This proves the inconsistency of a wide-spread opinion that all movements of a newly born child are reflex. In the first days of life the child has in many respects less reflex sensibilities than the nursling afterwards shows, and yet it moves more actively. Notwithstanding many reflex motions of the newly born are already strongly developed, and fully correspond with the last stages of the foetal condition, they are of great psychogenetic importance, because through their frequent repetition the harmonious activity of many muscles is perfected, thereby serving to prevent injurious and discomforting effects, through which co-ordination the development of the will is finally accomplished. Undoubtedly the strength of the gradually developing apparatus of the brain and will lies in the hindrance to reflex motions. The latter, even for this reason, must have taken place previously, so that here and there disadvan-

tageous effects are experienced ; as, for instance, there is no use in crying, therefore, it is better not to breathe so loud and violently. *By these logical operations, long before the acquirement of speech, the foundation for self-restraint is laid, which proceeds from the restraint of reflex movements.* Breathing is a continued line of reflex motion beginning with birth. The first cry of the newly born child was formerly not regarded as reflex, but it is almost certain that the first loud breathing is only a reflex activity.

The beginning of reflex muscular contractions falls into the period before birth, making it possible that outer impressions, by prolonged pulsations, produce and even increase movements of the *liqua anima* in the later fœtal period.

Preyer refers to the often-cited conception of Kant about the first cry of the child, concluding that such opinions vanish under the often-contested fact that children cry without possessing any brain, and that some children, as Darwin says, sneeze. Sneezing is often found in nurslings, and proves the close connection between the nasal channels of the trigeminous with the motor expiratory nerves, and is remarkable, as it demands, like sobbing, an inherited complicated co-ordination of several muscles.

Other inherited processes, as loud exhalation, are often met with in small children, but they are of little consequence. Among these we may number coughing, hem-

ming, and even sobbing and sighing, — two characteristic processes, which, though found in later years, have no expressive meaning in the child, who may sigh in its most happy mood.

Breathing, at the beginning of life, is entirely free from emotions. The rise and fall of the breast in its emotional effects, the stopping of breathing on account of excitement, are not found in early life. The respirations of the nursling during the first week are, nevertheless, very irregular, so that people may be mistaken in their judgments. The breathing is sometimes very quick, then feeble, and interrupted by apnoic pauses, then again by rhythmic, then for a short time deep, next shallow, returning to the normal type. At the end of the seventh week, the number of respirations in sleeping was twenty-eight in a minute; at the thirteenth week, twenty-seven. They remained irregular for months; after four or five quick respirations, there followed a pause, interrupted by a number of deep breaths. The older the child, the more regular they became.

While teething (nine months) they increased sometimes to forty and forty-two in a minute. In the sixteenth and seventeenth months, during sleep they were twenty-two and twenty-five per minute, and remained regular. At every noise not sufficient to awake the child, the frequency of the respirations was at once increased to twenty-five and twenty-six, but it returned soon to the normal condition. This exceptional reflex

sensibility of the respiratory organs I have observed very often. It is remarkable, because it proves the existence of a reflex arch from the nerves of hearing to the nerves of respiration.

The very slow *consolidation* of the whole mechanism of breathing in all nurslings depends unquestionably on the great reflex sensibility. In after-life stronger and more frequent irritations will have no influence on the change of respiration. The act of respiration, as the motions of the heart, is generally regulated without the action of the will. It illustrates excellently the development of the most complicated coördinate muscular activity, of which there was no trace before birth. The coördination begins directly after birth, through sufficiently strong irritations of the nerves of the skin; like an incomplete, periodical reflex motion, it is not only inherited but inborn, though not so highly perfected as it is after longer activity. Among the aperiodic reflex movements we may mention vomiting, choking, and hic-coughing. In choking, from one to five days old, children stretch out their tongues with a reflex lifting of the head, making faces like adults. The common cause seems to be an accumulation of phlegm, but it may be produced by a tickling of the gum and the root of the tongue by bitter substances. Vomiting is the result of an overloaded stomach, indigestible food, or of putting a finger into the throat. In the fifth week I saw, without any external irritation, milk previously taken, spring-

ing like a fountain, three or four inches high from the mouth of the child while lying on his back. Hiccoughing can be stopped by putting a half-teaspoonful of sweetened water on the tongue. I saw a very bad case so cured at once, but I can give no reason for this domestic remedy. The complicated mechanism of swallowing is a long-prepared and inborn act of man and animals. Preyer refers afterwards to a number of extensive experiments he made on his own child to produce reflex motions while sleeping. When touched on the left side he moved involuntarily the left arm, and *vice versa*. He also states that he differs from other scientists, leading to definitions which do not seem to belong directly to our purpose. The reflex starting, shrugging, and stretching out of the arms after a sudden strong impression, especially that of sound, also the shrinking back of the head with a quick motion, when frightened, have not been observed in the very young child. It is impossible that newly born animals or children should become frightened, even when meeting with some unpleasant sensation, as, for instance, a strong, shining light. This stage below sensibility lasts, however, only for the first few days. With fully matured children, the capacity for fright can be seen in a greater or less marked degree after the second day.

Another constant symptom of fright in children is their silence. Crying begins, after a certain pause, when the child falls down. It is possible that this condition

of being unable to cry is like that of aphthongia* or reflexaphasia, and tetanic irritation of the motoric nerves, especially the nerves of the tongue. This takes place more often with children than with adults, and is caused by their power of will being suddenly paralyzed, preventing them from uttering a sound.

All consciously moved muscles, including those of the tongue, the head, and the windpipe, become immovable by reason of the want of impulse of will. This shows that the sensibility of the reflective organs is lowered, and is probably the cause of the noiselessness of frightened persons at the first moment. The very strong irritation of some single nerve centers affects the hindrance of all other central functions. Finally, the motoric impulse being developed, the cramp of the tongue ceases, and this condition disappears, and crying becomes possible. A long series of experiences is needed for one to become conscious of such reflex motions of fright, and its influences and the activity of the will may be controlled; yet some are not able to do this at all; for the development of the child's power of will, these are of the greatest importance. *It becomes our duty, therefore, to exercise our children, as early as possible, in the conscious control of the hindrances to reflex motions.* At the beginning, very likely, no reflex motion is hin-

*That is, not having the use of the tongue, lacking the power of speech.

dered, but according to Soltman, there exists a peculiarity which lessens these disadvantages. The irritableness of the nerves gradually increases in the child up to the sixth week, at which period it is almost equal to that of adults. The moderate irritableness of the motoric nerves counteracts the disposition to convulsions. I must yield to Soltman's opinion in this, as he is in sympathy with me, and lays great stress on the absence of will, and consequently the power of hindering reflex motions. After many experiments on unborn and newly born animals, Soltman and myself found that reflex motions increased constantly till the beginning of the period which may be called that of reflex reaction. It must be remembered, however, that while the traces, by constant use, become more and more passible, and permit quickness of motion, the peripheric ends of the nerves of the skin become, by inevitable contact with moisture and cold, less sensitive. Therefore, in spite of what had been gained by the central cerebral and spinal activity, irritableness is lost by the power of peripheral sensitiveness, and very likely the slight sensation of the newly born child depends on its internal condition, because in the prolonged quiet before it was born, the ends of the nerves in the skin may have become agitated, while the brain was still inactive.

It is extremely desirable that by observation and simple experiments the beginning of the power to hinder reflex motions should be discovered. I saw a child

sixteen days old stop crying when turned face downwards on a cushion, and have observed in several young nurslings the quieting effect of singing, hushing, and playing on the piano. But these are not strictly cases in which self-restraint is exerted; they merely show the power of removing an unpleasant feeling on account of having received a new impression.

Even a just-born child, when violently crying, could be satisfied by being allowed to suck a finger. The activity of the brain is not able to influence the reflex and impulsive activity of the spinal nerves, because the brain is not sufficiently developed. True restraining movement can only be surely observed in small children when they are no longer, as during the first six or nine months, without the least sign of self-control in the secretion of the waste products whose accumulation irritates them. With all healthy children this irritation is great. We cannot say when this irritation, which begins normally with life, was first controlled, or when its immediate satisfaction was not retarded. In the first year, children generally begin to cry when the act is accomplished. Later they cry before, announcing its coming. They have experienced that the threatening, the punishment, and the natural unpleasant consequences of the immediate reflex activity await them; and here lies one of the strongest effects of early education, as is proved by untrained animals and insane persons, who do not exercise such control. The time when the con-

trol of the sphincter vesicle is acquired is difficult to determine. In my boy it was surely from the beginning of the tenth month, when healthy and awake, that the desire of secretion was always expressed by great restlessness. If heeded in due time, the secretion did not occur until some minutes after he was placed in proper position. All this time he needed, in order to free himself from the restraint he had himself put upon his will. Here are two proofs of the existence of free-will.

(1.) The hindrance of a reflex motion which was hitherto not controlled (six months old), and therefore not under the influence of the will.

(2.) The willing surrender of the self-imposed restraint, so giving consent to the act.

The first act of prevention, which, if not attended to at once, will not continue long, seems not to be acquired much before the end of the first year, but rather later. This is almost a failure, if the child is not perfectly well, if his attention is diverted, and when he is tired. The conquering of the reflex irritations while sleeping, independent of will, is controlled by habit, and is not acquired until much later. However, it has to be considered that a stronger pressure than common external irritation disturbs the sleep, thereby giving greater influence to the will. Those reflex motions which are not hindered through our whole lifetime seem to be more distinct.

The queer grimaces of little children and their inclination to convulsions must be first ascribed to a lack of the power of self-restraint, and secondly, to the physiological action induced by their irritation when teething, and these cannot be overcome until the power of will is strengthened by the development of the gray matter of the large brain. Preyer states that the sensation of pain hardly exists, and makes a strong appeal for a close study, investigation, and continued statement of the gradual development of reflex movements, beginning in the newly born children, and continued to the age when they are able to speak.

He points especially to the distinction between the innate, the acquired, the restraining, and the purely physical reflex movements, and those arising from pain, and wishes investigations to be made, in order to discover if there is any such reflex motion which belongs solely to man.

CHAPTER XI.

INSTINCTIVE MOVEMENTS.

INSTINCTIVE human movements are not numerous, and with the exception of sexual ones, difficult to perceive after the first days of youth. The more carefully should the instinctive movements of the newly born and the nursling be observed. To this end, a close observation of newly born animals is necessary.

INSTINCTIVE MOVEMENTS OF NEWLY BORN ANIMALS.

Instinctive motions are unquestionably shown by the little chick, a few hours after leaving the egg, even when it is still occupied in bursting the shell. This is proved from the moment it bursts its shell, and is deprived for several days of its power of sight. In an instance observed by me, six minutes after the sight was restored, it turned its head to follow a fly that was passing at a distance of twenty inches. Ten minutes afterwards, the insect came within its reach; it was caught by the first effort, and swallowed. Twenty minutes passed, and the little chick was placed at a certain distance from the hen and her brood, so that it could see and hear them. It peeped for a few moments, and ran directly to the hen.

Many unsuccessful efforts of picking and grasping are made, but the following instinctive movements are complete: first, motions of the head to see movable objects; second, picking, when in reach of them; third, running at the first call and the first sight of the hen; fourth, motions of the bill and head for swallowing small objects. All these movements may fail to show themselves, even when outer conditions encourage their appearance, but they never can be considered as acquired, or as the result of free will, because they are new to the chick itself, and instinctively executed, without any view to success. If this was not so, a little chick would not repeatedly pick at its own claws. The very young chick never having perceived movements, can have no conception of their effects, because it had no experience; but its forefathers had a conception, and the chick inherited the memory of it unknowingly. The chick acts, seemingly, skillfully and intelligently, not by its own reason, but by an inherited power of connecting the memory of its sensuous experiences with the memory of motor experiences; not with the memory of the success previously gained, which would represent a voluntary act. The diligent smoothing of its down with its bill, the scratching of its head with its foot, and the scratching on the second day, all executed without any model, can only be regarded as instinctive movements. Mr. Spaulding says quite truly, "The instinct of the present generation is the result of the accumulated experiences of past genera-

tions." The permanence of such association, related to the individuality of man, depends on the necessary impression on the nervous system.

No one is able to gain for the second time the same individual conception, but by hearing the ringing of a bell, which we heard the previous day, the same sound reaches our ear, enabling us, by the connection of nerves and nerve centers, to recall and conceive once more our former experience. Why should not these modifications of the brain substance from hour to hour, from day to day, under the most favorable conditions of acquisition, be transferred from the parent to the child, like any other physical peculiarity? *Instinct is inherited memory.* The fact that not all senso-motoric combinations (Verknüpfungen) are transmitted to the descendants, does not invalidate this conception of instinct as a hereditary association. Some of these combinations may not be sufficiently strong to be transmitted. In the chicken, the strongest are the movements of picking, swallowing, peeping, running, scratching, and flapping the undeveloped wings as it plunges forward, each and all being experiments which I observed in the fourth hour of its life, without any model. Some of these inherited instincts may die if not encouraged. Chickens hatched by Allen Thompson on a carpet, and kept there for several days, did not show any distinct inclination to scratch, on account of the want of friction and the consequent disuse of the inherited mechanism of scratch-

ing; but as soon as a little gravel was placed on the carpet, the scratching began. I have seen chickens four weeks old, which had been raised in an incubator and separated from other chickens, scratching on a smooth white piece of paper, as if the effect of light on the broad surface could be scratched away. This shows that it is done without reflection, following quite instinctively the sense of sight and touch. The swallow does not learn to fly, but it exercises its wings before leaving the nest, by spreading and flapping them repeatedly. The first flight is slower than that of its parent, but does not hurt itself. In a few days it has gained self-reliance. The movements of flight are not the act of will; they are instinctive as the picking with the chicken. I do not think that picking is, as was previously supposed, an imitation of the noise of picking of the mother. Preyer refers to a number of instinctive activities, resembling individual intelligence, tested by the following observations made by Agassiz: Young hermit crabs, when just escaped from the egg, reach out with exceptional vivacity toward certain shells which are put in the water for them, observing the opening with their mouth, and take up their quarters in them with wonderful rapidity. In case the shell is still inhabited, the crab remains close to the opening till the creature dies, which really happens soon after its imprisonment. The little crab takes out the corpse, devours it, and enters the empty shell. What an amount of foresight! This preference for the empty

shell shows us that the whole process cannot be inherited. But the young animals are not instructed. They were separated from their parents, and had neither time nor opportunity for individual experience. Therefore, the capacity of waiting must have been inherited, in case the shell were occupied, as well as the power of discriminating between the empty and the occupied shell. How is this applicable to the child of man? The same is true as in the case of these animals, the chicken and all others, which are clever in only one direction, and which come into the world with a good share of inherited memory for motions, *i. e.*, with instinctive motility.

**WHICH MOTIONS OF THE CHILD ARE INSTINCTIVE?
MOST OF ALL, THE GRASPING MOTION. THE
DEVELOPMENT OF GRASPING.**

Of all movements of the nursling in the first half-year, not one is of such importance, in its mental development, as its grasping movements. I therefore directed my special attention towards them. Some observers consider the reaching forwards and backwards with the hands in the first days of life as an act of grasping, as the fingers are not only pushed in the face of the child, but also in its mouth. This view is inconsistent with the usual meaning and action of grasping. Grasping presumes the conception of a desirable object and the necessary control of muscles, and these do not exist at this period. The first placing of the hand in the mouth

has nothing in common with the later grasping, save as both demand a motion of the arm. The hand is not always carried to the face, but among the many *aimless* reachings about, it happens that it goes into the mouth, a most natural act, derived from the position of the arms in the fetus. Newly born children continue to keep this position, putting their hands, as before birth, to the face and towards their lips. In case the lips are touched, the nursling is tempted to perform the motions of sucking; therefore, the early sucking of the fingers, perceived by Kussmaul on the first and by myself on the fifth day, followed by biting the finger, cannot be called intentional. The position of the arms and hands in the uterus is the result of limited space. Any other position would demand more space for the embryo. It does not seem justifiable to recognize in these first approaches of the hand to the mouth the beginning of a grasping movement. The young nursling, whose fingers accidentally enter his mouth, is unable to replace them when taken away. Even if placed near the lips, he is not able to keep them there, on account of the weight of the arm. The nursling, at the ninth day, while asleep, did not clasp my finger as he did when awake; yet this does not prove an intentional grasping, but a mere reflex motion. The proof of this I see in the fact that another child of seventeen months, when I put my finger in his palm while asleep, did not clasp it; but when I rubbed gently on the upper part of the hand, he clasped it, without waking.

The foot presents similar conditions to the hand. The failure to clasp the finger while asleep may be ascribed to the insufficient sensitiveness of the nerves of the skin, and the lessening of the reflex sensitiveness during sleep. The first grasping after objects, with the distinct desire to get them, Sigismund observed in a boy nineteen weeks old, and I in a girl eighteen weeks old, and in my own boy at seventeen weeks. The use of the thumb, as an absolute necessity for any act of grasping, is slowly acquired by the child, while the ape uses it to perfection the first week. From the third to the seventh week, the child did not encircle my finger with his thumb, but only with his fingers. In the eighth week I became assured that the thumb as well as the fingers was placed round a pencil.

At the end of the twelfth week, when throwing round its arms, it often happened that my finger entered its little hand. On the eighty-fourth day, I saw for the first time the use of the thumb, in such a way that it looked as if the child had intentionally grasped at the finger which was held within his reach, and made to follow passively the motions of his arms and fingers. This experiment being several times repeated, I became fully convinced that the use of the thumb and the grasping of the fingers were unintentional, reflex, merely the consequence of the sensitiveness of the skin. I myself, at least, have not been able to discover any sign of intentional grasping before the fourth month,—an opinion

which is accepted by several other scientists. At the one hundred and seventeenth day, I observed that a little rubber ball, placed within his reach, failed to be caught. When placed in his hand, he held it long and closely, moved it to his mouth and eyes, and a new and intelligent expression became visible. On the next day, energetic efforts to grasp were repeated; but he grasped often in vain, trying to seize things at the distance of twice the length of his arm. In all cases he showed great attention. The next day, everything that came within the reach of the arms seemed to give great pleasure to the child, but not less astonishment. In the eighteenth week, his failure to grasp led the child to close observation of his own fingers. Probably he expected the sensation of touch, and when this happened, he wondered at the novelty of the sensation; he likewise went on carrying to the mouth several objects. At this period the stretching forward of the arms to grasp is the expression of a strong desire. On the one hundred and twenty-first day the child for the first time stretched both its arms toward me at the early morning greeting, with an indescribable expression of longing. Nothing was shown the previous day to promise such an act; the progress from grasping after lifeless objects to a member of the family was sudden.

Nineteenth week, the child took a piece of meat which was offered on the point of a fork, and placed it with his hand in his mouth.

In the twenty-second week his grasping for objects with both hands, in a direction corresponding to the lines of sight, was more sure, and his attention quite lively. In order to do so, the child, who was lying on his back, rose to a sitting position and bent forward. The fixing of the attention is expressed especially by a sudden pushing forward of the lips, a pursing of the mouth, which I observed on the one hundred and twenty-third day in connection with grasping movements. The act of grasping was, however, still incomplete, as the four fingers did not operate in close connection with the thumb. On seeing a desirable object, the child spread the five fingers of both his hands, and stretched his arms. The power to use his thumbs and fingers in unison is not easily acquired, as not only the coördinate act of will is necessary every time this is done, but it depends also on the position and form of the object, and the number of fingers used accidentally in bending round it.

At the thirtieth week the act of grasping was quickened and developed, in spite of this uncertainty in estimating distance. Form, color, and glistening objects awaken the pleasure of the child, and any object reached is placed in the mouth, and the tongue is stretched out to lick it. There is an underlying reason for this. Sucking and tasting are the strongest and most experienced pleasant sensations known to the young being; therefore, in case he meets with a new and pleasant one, — for instance, a light color, a round, smooth body, or a smooth sur-

face, — he attempts to bring it in contact with his lips and tongue, through which the pleasant taste of the milk was introduced to him. The parts of the child's own body appear to him strange objects.

At thirty-two weeks old he likes to stretch his legs vertically upwards, and observe his feet attentively, as he does other objects outside of himself. He grasps with his hands after his feet, and tries to bring his toes into his mouth. The child expresses his interest by gazing at the object which he holds, and pouting his mouth; and he does so, probably, because the thing which was previously seen and desired, and which he now handles, gives him new sensations. What was before only light, becomes now colored; only long or short, now appears smooth, rough, warm, cold, soft, heavy, light, wet, dry, sticky, or slippery. The connection of two sensuous impressions in one object is noted, and it pleases him. His own foot is such an object. In case the object seen and handled is immovable, and cannot be brought to his mouth, like the ball and his toes, the child seeks, nevertheless, to do so, whether the thing be great or small, because in doing so he derives the source of his greatest pleasure. This pleasure obtained by tasting objects which he has grasped, causes him to continue his attempts at grasping, and probably also keeps up his desire to taste the things he obtains. Then the child remembers his taste sensations, or, what amounts to the same thing in this consideration, the satisfied feeling which he has after the satis-

faction of hunger. The sequence of his awaking powers is therefore, first, taste; then taste and sight; then sight and desire; then taste and increased desire; at last, sight, grasping, and taste.

Through repetition, the recollection of tastes becomes amalgamated, so to speak, with seeing and grasping, until experience has at last taught him that things handled have no taste at all, or an unpleasant one. In these first attempts to grasp at objects, it is to be noted how the child fixes his attention, and pouts his mouth; while in the thirty-fourth week, when the act of grasping was performed more quickly, the mouth was always open and the object brought to it.

When the child was left to himself to experiment with a crust of bread, it was noticed that in spite of his correctness in grasping, his open mouth could not always be found, but he touched his cheeks, chin, and nose. This proves an uncertainty which still existed when attempting to eat with a spoon at the age of seventeen months. It is impossible to decide just when the child could first put his finger or his food into his mouth without touching other parts of his face.

At the time of teething, the child no longer throws his hands aimlessly about, but holds three or four fingers regularly in his mouth, as this gives him some alleviation. So doing, he comes to reflect, and touches every spot that pains him which he can reach with the finger. Forty-three weeks old, the child not only reaches out

for his bottle with both hands, unaided, but carries it directly to his mouth.

At forty-five weeks old he grasped after the flame of a lamp, and later after objects separated from him by a window, ignoring the transparency of glass, which appears most wonderful to all children. The greatest progress in the movement of the arm muscles was recognized at this period by the grasping after very small pieces of paper on the floor. The thumb and forefinger were used skillfully in picking them up. In his frequent plays with small pieces of paper, occasion was given to observe the previously mentioned inaccuracy of the sense of sight unseconded by touch. Hitherto it had been necessary to take the little pieces which the child used to bite out of his mouth; now at fourteen months, he takes out every piece with his right hand, and presents it to me. *I made the discovery that the pieces which were on his mouth or on his lips were not always recognized by touch in the points of his fingers, so that without the assistance of the sense of sight the sense of touch was incomplete.*

Both senses combined had accomplished long before some remarkable actions, in spite of his numberless efforts at the age even of two years to grasp objects out of reach. When ten months old, I saw the child take a long hair and observe it thoughtfully, and play with it, putting it from one hand into the other. Of the many thousand nerves and muscular fibers necessary

to bring such movements to a harmonious activity, very little is known; but it is clear that the child's power of will originating in its desires already directs the entire nervous muscular mechanism. Before being capable of this action, the movement of grasping must have been repeated many hundred times, so that by repetition at length a pleasant sensation had been brought about. This at first was *not* distinct, but little by little became an ever clearer and clearer perception, and at length arose a conception in his mind of the concreteness of objects. The movements of the arms, which before and afterward were directed to the mouth and face, must have been repeated many times before the child became conscious of them. But when the desired object was conceived by the child's power of imagination, when the movements of the arms were comprehended as leading to a certain end, then the consequence of these two conceptions *as inseparable* gave rise to an act of will. The distinct conception of the *motion* lost its importance as soon as the *aim* was clearly recognized. On the contrary, too much importance has of late been directed to the necessary pre-existing conception of new and intended motions, especially so by Gude and Lotze, whose aim this is.

Many movements, however, which are governed by the will, as those of the eyes, are generally in no sense distinctly preconceived, that is, so as to be conscious.

Only generally is the manner recognized for directing the end of a necessary movement.

In order to produce a simple will movement, as one arising in the desire for objects, similar movements must have been previously produced without the use of the will, otherwise the muscular sensations could not be performed. They are the necessary directing powers of self-conscious motoric impulses in the child as well as in adults. They play, in connection with instinctive movements, an important role, because the memory-picture of the innervation or muscle feelings, which forms a contraction of the muscles in opposition to rest, decides *which* muscles have to be contracted, and how *strongly*. This happens after the special kind of motions necessary are fully known. In case of any conscious movement, the utilization of the mind-pictures is quickened and simplified to such a degree that the cerebro-sensorium can be left out, and the cerebro-motorium becomes sufficient to set the muscular system into activity, after a sensoric impression was made. This is the chief characteristic of the cerebro-motoric reflexes, as, for instance, in later life, the grasping of a hat in a hurricane. But, on the other hand, in dreams with children, as well as in hypnotics, the sensoric impression can so touch the cerebro-sensorium that complex movements will be produced in the same manner as if they were the result of an act of will. A cerebral restraining apparatus wanting in the nursling, as the child develops, prevents

more and more the idio-motoric or purely reflex (spinal motoric) movements, the consequence of sensoric impressions at a period when the power of self-control begins to appear. These movements, which form the beginning, are as follows: first, the movements hither and thither of the hands; second, the grasping of the fingers placed in his hands; third, a mechanical holding of objects, without a consciousness of the action, as in adults, certain movements become involuntary from repetition, as, for instance, the unconscious associated action of the thumb, a purely reflex movement. As the art of holding lasts comparatively longer than the reflex motions, and the attention of the child, though very slight and quickly passing away, is directed to the new experience of holding something, the motion cannot be longer accomplished without the curious sensation in the cerebro-sensorium, in spite of not being a full act of free will. The child desires the object which comes within its reach, and tries to hold it.

From the act of directing the eyes towards an object seized to that of holding it, is only a step.

BITING, CHEWING, LICKING.

Sucking is one of the earliest coördinate motions of man, and is connected directly with swallowing. It takes place even before birth is fully accomplished, whenever an object, fit to be sucked, is placed between the lips and the back of the tongue.

In December, 1870, three minutes after the appearance of the head of a newly born child, who began to cry softly as soon as his mouth was free, I touched with my finger the top of his tongue and he stopped crying immediately and began to suck vigorously, but did not do so when I put my finger only on his lips or between them. Doubtless, every normally developed child learns before birth to swallow the *amniotic fluid*, but it scarcely sucks its own fingers. As regards the act of sucking, itself, it is indifferent whether any liquid enters the mouth or not. The sucking for hours on empty rubber pipes, which are often given to children to gratify them, is a very deplorable custom, as is likewise the sucking of handkerchiefs and fingers a few minutes after birth, in which it is presumed that swallowing is not necessary. Under normal conditions, swallowing is that muscular activity which is directly connected with sucking. The question arises, In what sense is this movement useful? Sucking in human monstrosities without brain, and little dogs without a large brain, excludes at once the idea of the necessity of intellect, the power of will, or intention. But as in the normal condition, only the hungry, or, at least, the not fully satisfied nursling sucks, and the satisfied one pushes the nipple away, it is evident that this is more than a mere reflex motion. Moreover, the ceasing of the sucking motions of the satisfied child cannot be referred to fatigue from previous sucking, because often it is not renewed for a long time; nor is it an impulsive

movement, because with the wide-awake child at first it only occurs when the lips, the tongue, or the gums are touched with an object which induces sucking. The sucking movement of the sleeping or dreaming children, with empty or untouched mouths, shows that sucking can arise from purely internal causes, after it has once been produced by surface irritations. According to this, sucking must be regarded as an instinctive motion. Any objection to this is easily overcome. It has been stated that young animals soon forget how to suck, if deprived during a few days of the occasion for doing so. Of all motions of the nursling, no one is so perfect from the beginning as sucking; it is not as successfully performed, however, on the first day as on the second. I found, sometimes, the efforts at sucking in the first hours of life entirely unsuccessful, unless aided by turning a little ivory stick in the child's mouth. In other cases, however, sucking proceeded regularly at the time of birth, which must be founded on inherited qualities. The intervals of sucking are shortest on the first day of life, and increase afterwards. The reason for this is, that at first the child becomes more quickly tired and his little stomach more quickly filled, and perhaps, too, because of the imperfect condition of the milk. It is a known fact that the child does not at once find the nipple without assistance, not until after several days, sometimes not until the eighth day. This is much later than with animals, but the child has to perform some sidewise motions. Some-

times it happens that the nipple does not enter the mouth, but the child sucks the skin near by; which proves the want of a right understanding, even as late as the third week.

The sense of smell, though assisting, is less active than the sense of sight, which is easily demonstrated on children who are blindfolded, or on those born blind. The sense of touch likewise plays an important part in connection with sucking from the very first. Sucking is only performed on such objects that are placed in his mouth which are not too large, too rough, too hot or too cold, too strong, bitter, sour, or salt in taste. Hungry children, from the beginning, suck their own fingers. Even when not hungry, they like to place them in their mouth, especially when teething. Not less instinctive than *sucking* is *biting*. At ten months old, my child did not any longer suck the finger placed in his mouth, but always bit it. At seventeen weeks he already distinctly bit it, and held objects fast between the toothless gums. At eleven and twelve months old, the child caught my hand, carried it to his mouth and bit it till it pained, and he did so, too, to the fingers of strangers, putting them in his mouth himself. He also tried to bite a massive cube of glass. When ten months old, he had learned without instruction to break, with his four teeth, pieces of bread, and afterwards to swallow them; and anything reachable, if possible, was bitten by him. Before having the first tooth, he made motions of chewing, which were

aided by giving him a crust of bread. The accumulation of blood in the jaws before the cutting of the teeth, at the end of the first three months, with the coming of saliva, creates unpleasant sensations. That the toothless nursling, who never had an object in his mouth to be chewed, accomplishes the perfect motion of mastication at once, demonstrates clearly the fact that the functions of chewing and the necessary nerve muscles are set in activity without previous preparation, and are purely inherited, nay, truly instinctive. Another movement, decidedly original, and seemingly exercised by all nurslings, is the gritting of the teeth. When nine months old, it gives the child great pleasure to grit one of the upper and one of the lower incisors against each other, so as to be heard at a distance of one meter. The nursling seems to be astonished that his teeth follow each other in quick succession. He performs quite comical movements with his mouth, pushes both his lips far out, and makes some gymnastic evolutions with his tongue without making any sound. Not less instinctive seems the act of licking. If this were not inherited, how could the newly born child lick sugar? I have seen that a child two or three days old licked milk with not less skill than at seven months. At this latter period, not only are all objects which he grasps *touched* with his tongue, but also the lips of his mother, in kissing her. All the movements of the nursling, referred to as sucking, biting, smacking, chewing, gritting, licking, must be considered as typi-

cally instinctive motions. Every movement is useful, even the gritting with the first teeth, which familiarizes the child with them, and these are, therefore, inherited and unconscious actions.

THE HOLDING UP OF THE HEAD.

All newly born children, all chickens just leaving their shell, and birds are unable to carry their heads erect. The head falls either to the front, to the right or left, and even sometimes to the back. In this respect, the helplessness of the child is not greater than that of the chick, which learns in a few hours to master the necessary muscles, while the child needs several weeks to do so. This muscular activity is especially adapted for observing the growth of the will of the child. The weakness of the muscles cannot be regarded as the cause of the inability to balance the head, because other movements of the head are quickly performed. At the end of the first and at the beginning of the second week, I saw the nursling, in taking the breast, make violent sidewise movements of the head, similar to the young guinea-pig, calves, and fowls and other animals when sucking; but in the course of the first week, not a single trace of an effort to balance the head could be discovered. When eleven weeks old, it hung not quite so loose, when the child was placed in a sitting position. On the contrary, the head was for some moments balanced, though very imperfectly. At twelve weeks old, the head fell in the same way in all

directions, and was only momentarily balanced, but a daily improvement was shown in holding the head straight. (American children develop, seemingly, much more quickly.) At the thirteenth week, the head fell seldom, even when perfectly free, and was quite well balanced at fourteen weeks old. In another child, at the twenty-first week the head fell back very seldom when carried erect, and by the sixteenth week the falling over ceased entirely. The holding up of the head was therewith assured for life. With this important advance a strong will is undoubtedly connected. The first contraction of these muscles in balancing the head is unconscious, neither reflex nor instinctive, but impulsive. The use of this contraction is not known to the nursling, but the sensational effects of these muscles are different from the sensations of other muscles by the pleasant results, making the act of seeing and nursing more comfortable, therefore he learns to enjoy them. Among the different positions of the head, the upright one appears the most advantageous, and the process of accomplishing it is called an act of will. Adults drop their heads when falling asleep in a sitting position. Their will vanishes with their wakefulness. It requires a certain continued exertion of will to balance the head which the newly born child, even when awake, does not possess. Therefore we are justified in referring the distinct act of will to that time when the head does not fall. This happened in my child when sixteen weeks old. R. Demme observed one

hundred and fifty children, and found that some very strong nurslings balance their heads towards the end of the third month and at the first half of the fourth month. Some feeble children did not accomplish this act before the fifth or the beginning of the sixth month. I am unable to support the statement of Heyfelder that children at the sixth and eighth week attempted to hold their heads erect.

There are also statements as to the first efforts of the nursling, when lying straight down or keeping its foetal position, to turn himself to the other side. One child did not accomplish this till four months old, then with great effort. When I placed my own boy, nine or ten months old, face downwards on a cushion, the unusual position seemed very uncomfortable. The child very awkwardly turned himself without any assistance to the other side, so that after a few minutes he lay again on his back. Something similar occurred at the sixth month.

The child placed on a cushion, with his face downwards, propped himself up by his arms, and by turning his head, without crying, tried to change his position to a more comfortable one. This does not prove an act of will.

At the first quarter of the year no conscious movement can happen.

Newly born children are unable to turn their heads or uncover their faces when covered with the hand.

They cry and move about aimlessly, so that it is difficult to tell whether the position is pleasant or not. Some remain quite motionless, as I also observed in newly born animals.

LEARNING TO SIT AND STAND.

The first successful efforts to sit alone are by Ploss dated at the fourth month, by Sigismund from the seventeenth to the twenty-sixth week. Heyfelder states that strongly developed children are able to sit fully upright at the fifth or sixth month. R. Demme, on the other hand, finds that strong nurslings were able to sit entirely free for several minutes, without any violent efforts of their muscular strength, at the end of the seventh and the beginning of the eighth month. Children, moderately strong, did this only at the ninth or tenth month, feeble ones not before the eleventh or twelfth month. With my own strong and healthy boy the first effort succeeded astonishingly well at the fourteenth week. He was, however, given a position well supported at the back,—an artificially performed act of sitting. At twenty-two weeks old, he lifted himself up into a sitting position, without trying to grasp my face; but not before the thirty-ninth week could he sit alone, and then not without support, though sitting gave him great pleasure. Even in his little carriage, he needed support at the fortieth week. His efforts to keep his balance gave him an unfailling amusement. Finally, at

forty-two weeks old, he sat with his back straight in his bath, also in his carriage, where dress, covers, and cushions greatly facilitated his equilibrium. The more difficult sitting was in the bath-tub, with its smooth sides. This demanded his concentrated attention. As long as he was not disturbed, he did not fall to the side. He gained daily more assurance in maintaining his balance, so that in a few days he was able to sit a whole minute without any support. From the twelfth month, sitting became a life habit.

At the beginning, there is a peculiarity which is also observed with apes, as Lauder Brunton says, viz., a turning of the soles of the feet inwardly when left freely playing on the floor,—a habit caused very likely by the position of the legs before birth. Every child, when undressed, and left perfectly free in a warm bed, will assume, long after birth, a position similar to that in the uterus, with closely drawn-up legs and bent arms. The different kinds of chairs and stools for children are well described in H. Plos's illustrated book, "The Small Child, from the Carrying in Arms to its First Step." These chairs are more serviceable to the parents than to the child; they are even injurious when applied too early. It is an important orthopedic and pedagogic rule not to urge the child to a sitting position till by his own efforts by grasping at something, or without help, he can lift up the upper part of his body; in other words, not to urge him *to sit until he himself desires to do so.*

At eleven months my child could stand without any support, and was able even to stamp with his feet, but he did not feel quite safe, and only when protecting chairs or arms were near was the upright position long maintained. At a year old he still needed a support at his back for a lengthy standing. At the beginning of the second year he could stand, and by continual efforts was soon able to walk, thereby becoming an independent reality. A little girl, who sat for the first time at nineteen weeks old, was able to stand without help at eleven months, while her sister did the same at ten months. R. Demme found that strong children stand and walk with very little support when from thirty-five to thirty-eight weeks old, but that they could not stand two or three minutes at a time before the forty-fifth or forty-eighth week.

The statements of several observers show that this time differs greatly; the earliest attempts observed being four months, the latest twelve months, the efforts being induced by the experiments of the parents or the imitation of brothers and sisters. Want of muscular strength, different nourishment, neglect, and want of comfort affect the whole process. The difference of the statements may be explained by the views of the observers. The attempt to sit or stand is very different from the act itself. This difference is very often overlooked.

LEARNING TO WALK.

Learning to walk seems quite mysterious, as there is no reason for the alternate bending and stretching of the legs in the first upright position of the nursling. The possibility of learning to walk depends on the child who is held upright repeating the motion of setting down and lifting its feet. Similar flexions and extensions take place when lying in bed or in a bath-tub.

The regular bending and stretching which happens some months before the first successful attempts at walking, when the child is held on the floor and pushed forward, is a different thing. It is an instinctive act. If children left entirely to themselves could keep alive, they would undoubtedly gain in time an upright walk, but at a much later period, for the control of the surroundings by eye and ear greatly favors the process. In our nurseries, learning to walk is in most cases attempted too early, and with too much trouble.

In short, we act against a gradual growth of strength in the bones. Children's walking-chairs and walking-baskets, intended to aid early attempts, are to be condemned as being the cause of crooked legs. Creeping, the child's natural training school for walking, is in most cases not favored, though it should be recognized as a chief aim in mental development. On account of freedom of movement, the power to reach a desired object, to look at and handle it, is much earlier developed in

a creeping child than one that cannot move without support. Only prejudice, even superstition, makes the mother so eagerly prevent the creeping, perhaps on account of the greater trouble in following the child's movements. For the normal mental development of the child under one year old, it cannot be a matter of indifference whether it is kept for hours in a basket wrapped in shawls, tied to a chair, or allowed to roam about perfectly freely, on a carpet in a large room or in summer out of doors. When the child should creep for the first time is very difficult to say, because in most cases he is hindered in performing this act. The age differs even among children of the same family, depending on the nourishment, and consequently greater or less solidity of the bones, strength of muscles, and desire for motion. Some children do not creep at all. The kind of creeping also differs. Sliding on both knees is not natural in European children. My child did regularly on one knee, using the other foot as motive power. Livingstone observed Manyuema children in Africa creeping in the same manner. Kneeling is learned long after the child knows how to walk, and also to move on its hands and feet.

On the whole, successful attempts at walking depend on constitution, nourishment, example, and mother's attention. R. Demme describes a strong, intelligent child left without assistance. It began to creep at five months old. Till the end of the tenth month it crept on its hands

and feet like an ape, and though quick in motion made no attempt at standing erect. At fourteen months it began to stand, holding by firm objects, and learned to walk without assistance when between sixteen and eighteen months old. Though its general mental development was a normal one, it still continued its experiments in walking on its hands and feet. Standing without support, trotting and walking, according to Preyer, should be accomplished from the ninth to the eighteenth month. Champney's child was placed, when nineteen weeks old, so that its feet touched the floor, and then was pushed slightly forward. The legs began to move, as required. Every step was carried on without hesitation and irregularity, except that the feet were lifted too high. Touching the floor with one foot seemed to promote a desire to put the other down. This trustworthy statement of the nineteenth week supports my idea that the act of walking is an instinctive movement. It was at the end of the twenty-seventh month that my child trotted for the first time around the table, though wavering and staggering a little, like an intoxicated person who tries to run but does not fall. From this time, he could walk upright; at first, only quickly, almost trotting, with outstretched arms as if to prevent falling, afterward more slowly and with safety. In ten weeks more the child passed over a threshold one inch high: his knowledge and control of muscles not being sufficiently developed, he held himself up and threw his foot irregu-

larly, either too high or too far down. Preyer then refers to the following items about his child, which may be serviceable in a condensed form. At the twenty-second and twenty-third weeks, the child, lying on his back, tries to sit, and enjoys being placed upright on the knees of his nurse. In the twenty-eighth week he places himself erect on the lap of his mother. In the thirty-fifth week he places himself on the arm and hand of his nurse, and looks over her shoulder. In the forty-first week, first attempt at walking. The child is held under his arms, his feet touching the floor; they are moved to the front and to the side regularly. He seems surprised that no pushing comes from behind, and that nothing desirable appears in front. The pleasure in walking is great. The child sits without support.

In the forty-third week, whereas, at the beginning, the child placed one foot indifferently either over, next to, or before the other, he now lifts his feet high, and puts them down without crossing. These motions give great pleasure. When he is restless, he is very easily quieted by being placed on his feet, when he begins at once to move forward.

From the forty-fifth to the forty-seventh week the child's daily exercises were stopped, in order to see if he would forget what he had learned.

In the forty-seventh week he placed his feet surprisingly well, but did not understand his muscular power.

In the forty-eighth week he stood often without any

support, stamping his feet. He held a chair, pushing it forward with very little assistance.

In the forty-ninth week, when left to himself on a soft comforter, surrounded by cushions, he was not able to lift himself without assistance, and could not stand by himself even for a few minutes.

In the fiftieth week, when wishing to walk, the child could not raise himself to his feet, when sitting or lying.

In the fifty-third week, he crept or rather slid, but could not lift himself.

In the fifty-fourth week he held the chair by one hand, while walking. He made very slow progress in creeping, because he was unable to perform the symmetrical stretching of arms and legs.

In the fifty-seventh week the movements on the knees and hands were smooth and quick, but walking without support was impossible.

In the sixtieth week the child could lift himself from the floor by a chair, first on his knees, then on his feet. He stood free for a few moments, but not without holding on.

In the sixty-second week, no change. The child did not depend on himself, showing a lack of self-confidence. However, when I took my hand gradually away from his back, he stood perfectly alone, imagining that he was being held.

In the sixty-third week the child walks, still holding with both hands to the 55 cm. high railing around a

pecially constructed, upholstered wooden square of $1\frac{1}{2}$ m. in size.

In the sixty-fourth week the child proved still that he was not lacking in co-ordinate powers, but in self-confidence, as he still required assistance, if merely the placing of his little arm in that of another person, and stumbled if not so supported. Too much assistance and urging, however, will retard the child's progress and destroy his self-confidence.

In the sixty-sixth week, suddenly, on the four hundred and fifty-seventh day, the child could walk alone. The day before he still had to be led by a pencil. Now he ran around the table, as already described. The new power delighted him; he ran in all directions, throwing his arms up and down, laughing aloud, and calling, "Ha, ha!" from mere pleasure at success. The next day he stopped running suddenly, stamping his feet, and moving from one foot to the other without help. On the four hundred and sixty-first day he could turn himself around with ease, but needed help in walking backwards. He stretched his arms aimlessly around, and was able to direct his attention to other objects while walking.

In the sixty-seventh week, as inevitable as falling may seem, it must be stated that my boy did not fall more than three times during the first days of walking. In falling he stretched his arms straight forward, an instinctive movement, as he never saw a human being fall. If he fell when walking backward, no protective motion

was perceived, neither do I know whether the arms were stretched out at the first fall.

In the sixty-eighth week the act of walking no longer demanded particular attention. In stepping forward, the child looked sideways, chewed, swallowed, laughed, called out; walking having become mechanical.

In the seventieth week the child lifted himself up from the floor and stood by himself.

In the seventy-first week he was able to pass over the threshold, one inch high, holding by the walls.

In the seventy-seventh week the child ran around a large table nineteen times, without pausing more than five seconds at a time, calling, "Mamma, bow-wow!"

In the seventy-eighth week he was able to pass the threshold with something in his hands.

In the eighty-fifth week, in running, he leaned forward as if aware of the law of equilibrium.

In the eighty-ninth week he still connected running with a rhythmic motion of the arms.

In the one hundred and fourth week he danced around, keeping time to music.

In the one hundred and twentieth week he learned to walk on all fours, playing bear. Before, he had only slid on hands and feet. He jumped until exhausted, and climbed up on chairs and tables.

In the thirtieth month he climbed up twenty-five steps, and ten days later with both hands free.

In the one hundred and twenty-fourth week he per-

formed gymnastic exercises with delight, climbing, jumping, throwing objects from the window, and stones into the pond. The moving of objects on the table, and anything within his reach, was perfectly original, and must, therefore, be inherited.

On the whole, all these movements must be considered wholly or partly instinctive. They were not the result of training. If they are to be called acquired, it must be admitted that very little is gained by imitation. The child did not see any one creep or slide, climb, jump or throw, and he would perform these acts if left to himself. The ancestors of mankind must have found these motions so useful that they formed strong habits, — so strong as to become hereditary. With this conclusion, it seems as if these harmonious and most useful movements — such as those of the eye muscles in the act of seeing, which demand the least effort in performing their offices — come by the law of inheritance.

CHAPTER XII.

IMITATIVE MOVEMENTS.

A MOST exact definition of the period of the first imitative movements is of special psychogenetic interest, as the most insignificant imitative movement proves the activity of the large brain. For, to imitate, it is not only necessary to perceive with the senses, but the conception must be clear enough to enable one to execute a corresponding movement. This complicated process of three combined activities cannot be accomplished without the large brain, or at least a part of it, perhaps that portion called in German the *rinde*. Certain perceptions and movements are possible without the large brain, but not the creation of such movements through these perceptions. (Many imitative actions may appear as unconscious acts of will, but when the movement is performed for the first time, it *must* be recognized as a result of the action of will. The oftener an act of will is repeated, the more it turns into a reflex motion.) In short, by imitating, the child proves the existence of his power of will. When are imitations first observed? If a nursling is especially trained for the purpose, he can imitate much earlier and more satisfactorily than other-

wise. Such movements, indicating an early imitation, are recognized in the pouting of the mouth and pushing forward of the closed lips, which often show concentrated attention in adults. The pushing forward of the lips appeared in my boy on the tenth day, when in his bath a candle was held before him at a distance of one meter. When seven weeks old it was repeated on perceiving a strange face, and at ten weeks by bending and stretching his legs. The child looked as if wanting to say, oo, u. Apart from this already familiar movement, the child was unable to imitate this motion under the most favorable conditions. Only at the end of the fifteenth week, I perceived the beginning of imitation as the nursling tried to purse his mouth, when I did, close by him. The want of perfection in the movement compared with its completeness, when performed by his own free will, proved that it was imitative. After many efforts in this direction, the results were so unsatisfactory that it seemed to us that rather accidental coincidences had brought them about. Only at the seventh month could the successful efforts to imitate the pursing of the mouth and some movements of the head no longer be attributed to accidental coincidences, especially as the child laughed when I did. His attention to all new movements made before him was astonishing. He followed them visibly with great interest, but in no case did he try to imitate. This indolence was the more surprising, because at the seventeenth week he imitated perfectly

the pushing out of my tongue between my lips, smiling before repeating the amusing movement.

It is hereby shown that motions were imitated at the fourth month, which at the seventh and even the ninth month were accomplished very unsatisfactorily. At the tenth month, however, correct imitation of manifold movement was carried out in full consciousness; as hand and arm motions, beckoning, for instance, and saying "tata," the child looked fully at the person and made the corresponding motion. The beckoning was a movement acquired by imitation very early. I perceived it first in my child when ten months old. When he was carried out of doors, his mother had a habit of beckoning to him, and he responded with one arm, sometimes with two, but with an expression showing that he was not aware of the meaning of the act, so that when I entered the room, he repeated these imitated motions as long as the door was in motion. They became regular, but had no connection with saying "Good by," as he also repeated them when the door of a large wardrobe was opened. The imitative movement had entirely lost its character. After a few weeks, these arm motions were superseded by mere waving of the hand. It seemed as if the mechanical opening and closing of the door had become a representation of saying "Good by." If I made a beckoning movement without opening the door, he repeated it very mechanically, though with an expression of great surprise, finding it difficult to comprehend the quick move-



ment. All imitated movements were not perceived so clearly as acts of will. Entering a room full of nurslings, all quiet, it was easy to see the contagious effects of crying, because when one began, several followed. Even if one child (nine months old) heard another cry, he very soon followed the example. The older the child the less was the inclination to participate, but it was sometimes found in children four years old, who sometimes (as in hypnotics) unconsciously imitate motions performed before them; for instance, they copy the manners of strangers, bowing or holding their arms as they see others do. A little girl, a year old, playing with her doll, imitated all the actions of her nurse, — singing her doll to sleep, and kissing, bathing, and punishing it; she also repeated the noises she heard the dog, the cat, and the sheep make. Another little girl, eleven months old, shook her forefinger when she was threatened, as she saw others do; brushed herself when she looked at the brush and comb; put a spoon in her mouth, drank from a cup, and sang a lullaby to her doll, and imitated rocking. She also imitated the motions of sewing and writing (licking the pencil). At fifteen months, she nursed her doll exactly as she was nursed, imitated shaving her own chin, and reading by running her finger over the book, modulating her voice. At eighteen months, she imitated singing and the tones of the organ; and at nineteen months, she walked on her hands and feet, saying, "Bow-wow," after the fashion of dogs.

When twenty months old, she pretended to smoke by placing her fingers on a stick, exactly as an experienced smoker would do with his cigar. Her younger sister did not begin to imitate before fifteen months old; while the eldest of the family, when nineteen months old, sewed two pieces of cloth together, using the needle perfectly.

Toward the end of the first year, voluntary imitative movements were more skillfully executed, but, needing more complicated co-ordinations, they were not so successful. When my boy was twelve months old, some one touched a glass with a salt-spoon, producing a sound. He at once took the spoon, looked at it awhile, and used it in the same manner, but it did not sound. Such an entirely new imitation impressed the child's mind very deeply. He learned to blow with his mouth, and was so strongly impressed by this new acquirement, that it was repeated while dreaming; showing that, however insignificant these motions seemed to the adult, they were clearly stamped on the child's brain. It always required a few seconds before a new or comparatively new motion, however simple, could be imitated. For instance, when fourteen months old, my child had a habit of saying ä ě, ä ě, while moving his arms systematically, but with a motion very different from the previous beckoning, and he was only able to repeat these motions after a pause of several seconds. This signified clearly that even the simplest mental processes needed a longer time for their execution than later. Imitations are more quickly made

when not urged, because the child has to begin them himself before he can put the motions into effect. When I hemmed or intentionally coughed without looking at the child, he would respond very amusingly. If I asked, "Did baby cough?" or if I said to him directly, "Can you cough?" he would do it, but not so successfully as before. Here the child saw not merely the imitation, but comprehended the peculiarity of sound. This point once reached, all imitative motions become more complex and connect themselves more closely with the objects of daily experience. In the fifteenth month the child learned to blow out a candle. With cheeks puffed out and lips protruded, he blew from six to ten times without success, grasping after the flame, and laughing when it was extinguished. His imitation was not quite correct, but no child that never saw a light blown out could invent the idea of blowing it out. Neither reason nor experience was able to invent. In general, I observed that the less complicated the motions, the more easily were they imitated.

Trying to amuse the child, I opened and closed my hand, and he began to do the same thing. The exactness of execution was striking when compared with his unskillful blowing. It was the result of less complexity. However, as simple as the bending of the fingers appeared, it required many harmonious impulses of nervous irritation and contraction of the muscular sinews, so that their performance could hardly be explained without the

influences of heredity. Some exceptional motions, for instance, the standing on the head, if not done easily by the ancestors, could not be accomplished exactly at the first attempt. The opening and closing of the hand were a very common motion among the forefathers of the child, so that the imitation of this act, though slow, was well done. The next day it was done more quickly, and the child observed his own and my hand with astonishment. I mention a few of his motions at the fifteenth month, to show the rapid progress which he made. I placed a large ring on my head and took it off slowly; the child did the same.

But when a combination of the mouth and muscles and an exhalation had to be imitated, many fruitless attempts were made before one was successful, as only a part of the complicated muscular actions could be perceived, while the rest had to be found experimentally. For instance, the child was found unable to make a sound on a bugle. He took it in his mouth, trying to imitate the sound with his own voice. He succeeded and accidentally, and from that moment he was master of the accomplishment (eighteen months). Having seen his mother comb her long, dark hair before the glass, he took a hand-glass and a comb, pushing the comb around his head where there was no hair. He also brushed, delightedly, all of the furniture within his reach. Several times he took a large handkerchief and put it around him to make a long train, looking proudly be-

hind him. He put a collar around his neck and tried, not very successfully, to dry his hands with a towel after washing them very well with soap. He afterward performed many complicated actions, such as tearing of papers, feeding of deer with grass, and wiping his feet as if his shoes were soiled.

The lively interest the child took in all that happened around him was surprising. The setting of the table, making of the fire, and the lifting and moving of furniture, induced him to try to help. His capacity of imitation appeared almost like ambition. In the twenty-third month, many actions of ceremony, such as greeting and bowing, were instituted. The child saw how an older boy lifted his hat; at once he lifted his own, and put it on again.

All these later institutions were the products of his own free will. They showed on the one hand the powerful instinct of imitation in the second year, and on the other hand the importance of this instinct in further mental development. For if the child at this period is left to an inattentive or uncultivated companionship, he will not only imitate what is injurious to him and form bad habits, but development in the right direction will be thwarted.

Therefore it is of the greatest importance to avoid undesirable connections at this period, and to see that all impressions are made in the right doctrine. Preyer refers to the imitative movements of the muscles of

speech, and the sound syllables and words, in the third part of his book. First responses of the nursling to the speech of its parents are not attempts at imitations, but reflex motions, such as the crying after being slapped, which first occurred, according to Sully, at the eighth or ninth week. Preyer states that singing was one of the earliest imitative movements. All imitations are based at first on the will of the child, and their exactness does not depend entirely on the superior activity of the brain, because deaf and dumb often have a better impression of imitation than normally developed children.

CHAPTER XIII.

EXPRESSIVE MOVEMENTS.

FACIAL expressions arise largely from imitation. Those born blind and even those who become so in advanced years are very deficient in facial expression. Their physiognomy seems stiff and unchangeable, and their facial muscles, when eating and speaking, are very little used. The happy face is unlike the unhappy one from the first day of life, the intelligent is different from the stupid, the attentive from the inattentive one. From the second half-year, children begin to copy their parents. If one speaks earnestly to a joyful child one year old, it will become serious, and *vice versa*. It would be a too hasty conclusion to say that all means of acquiring facial expressions come from imitation. Some are of reflex origin, such as gestures, or, as is often observed in families, some are instinctive. (As each gesture is connected with a facial expression, which serves to increase the impressive powers of speech, they combine to form mimic gestures, and must be considered collectively in order to separate the purely expressive muscular motions of the nursling, so as to arrive at their origin.) As long as the child is unable to speak, he makes himself understood in

the same way as the higher animals do among themselves, that is, through demonstrative motions and postures or expressive sounds to convey the idea of complaint, joy, calling, dependence, longing, and sadness. The child uses the same expressive means in playing with inanimate objects, — laughing, pouting, kissing, crying, frowning, shaking the head, shrugging the shoulders and begging with his hands, — all these actions performed in his play.

Nothing is more misunderstood than the first smile. Any opening of the lips of the baby is considered smiling, as if every new contraction of the mouth in the adult should be thought to indicate a smile. Its interest shows simply a feeling of contentment, or a pleasant conception. Both must be strong enough to produce an irritation of the facial nerves, for no mere conception can produce a smile, which seems but the result of pleasant conception, even when not quite conscious.

As before stated, the number of sensations connected with the feeling of contentment are, in the first days of life, very few. Neither has the nursling a conception, for it has no power of conceiving. The child pleased in sucking its mother's milk, and in its warm bath, does not smile at first; it only expresses contentment. But we may know how easily such a comfortable condition is manifested by a slight elevation of the corners of the mouth. If this can be called smiling, children smile quite early even when asleep. On the tenth day I saw my child, while asleep, after nursing, move his mouth

as if smiling, while the little creases in his cheek showed that his closed eyes had a sweet expression. This was frequently repeated. On the twelfth day the same thing occurred while the child was awake, but it was without consciousness. Only on the twenty-sixth day, when the child had become able to conceive its sensations and the feelings of contentment derived from them, could this play of the mouth muscles be called a conscious smile. On that day the child was well nursed and lay with eyes wide open, or sometimes half closed, and with an indescribable expression of happiness on his face; he then smiled, turned his eyes toward the kind face of his mother, and for the first time uttered a few sounds, expressive of the happy situation.

There was no connection between the conception of the mother's *face* and of her *breast* as the source of his happiness, and no imitation of smiling, because he first smiled at inanimate objects, such as tassels. Up to the fourth month no imitative movements were observed. The above-mentioned early, as also the later complete, smiling arose from a mental condition of contentment, and there seems to be no reason to consider this less inherited than the crying in pain, which no one pretends to consider as imitation. Later, the child smiled when some one smiled at him, but he did not always do so. Strangers might speak ever so kindly; the face of the child, previously gay, now became serious and astonished. The first imitation of smiling in children is not to be regarded like

that conventional order of greeting, which by education is lowered to an empty formality in adults. The original smiling, the satisfaction at new and pleasant feelings, continued in sleep. A bright glance of the eye, lively motions of the hands and feet, are to be regarded as signs of a child's happiness. Consequently, consciousness of the first smiling varies greatly, since it includes the first imitation of a smile. Heyfelder says this occurs in the fourth week; Champney, in the sixth or eighth week; Darwin, in the seventh to ninth; and Sigismund, in the tenth week. These differences of opinion are based on the nature of the occasion. One child smiles at his own picture in the twenty-seventh week, another in the tenth week, my own child in the seventeenth week. Then on the one hundred and sixteenth day it was more a laugh than a smile, which surprised me, as on the one hundred and thirteenth day he looked attentively without a smile of satisfaction. In some cases, smiling results from the pleasure at the conscious conception producing the smile; in others, from the conception of pleasure in taste, or soft, warm, or musical impressions. When the child does not feel well or is hungry he cannot smile, and this should be carefully remembered. From smiling to laughing is but one step, laughing being only a stronger or a loud smile. The first laughing at a pleasant sensation is very different from that of the developed consciousness when perceiving something comical, for this occurs later, in the sixteenth or seventeenth week. Plinius says that

before the fortieth day no child laughs. I observed a perceptible laughing, accompanied by a sound, on the twenty-sixth day, caused by motions of a curtain. It was the sound that attracted my attention. It was repeated on the fifth, sixth, and eighth weeks, when looking at swinging colored objects, or on hearing the piano. It was not till the sixth or ninth week that the child's laughing on seeing its mother's face gave a sign of higher joy at a recognized pleasant expression. But the laughing when we nodded at him or sang to him was much more expressive, and was afterwards accompanied by the quick lifting and falling of the arms, a sign of the highest pleasure. In the eighth month, when playing with his mother, his laughing became loud and continued, giving a peculiarly joyful impression to his surroundings.

Objects falling were observed attentively and followed by loud laughter in the ninth month at the new sounds, and in the thirteenth month he laughed at his attempts to stand without support. When a year old, the act of laughing seemed to be conscious and understood. He grasped laughingly at his image in the looking-glass. He laughed when others laughed, and showed a self-reliant, crowing laugh. Cunning laughing I did not observe before the second year; spiteful laughter and shedding tears when laughing I have not observed in children under four years old. It may be said that both smiling and laughing are original expressions, as observed in the first months of life, as they are not at first produced by

imitation, or intended to express pleasure even when asleep. The reason why smiling is expressed in this peculiar manner by moving the lips, raising the corners of the mouth, making sounds, shedding tears, and dancing of the eye, is unknown; it must result from inheritance. Darwin says very truly that smiles do not come as early as crying, because the latter is more useful to the child. Laughing arises from imitation more than from crying. It seems as if it belonged to intelligent *animals*; for instance, to a dog, which distends the corners of his mouth, and with beaming eyes bounds joyfully into the air. I once had a Siberian dog that laughed in this way. That apes laugh is a well-known fact. All of these observations indicate the inherited tendency to laughter. Apes are not less sensitive to tickling than children, and laugh when in a gay mood, but Darwin says that tickling will not make a crying child laugh.

THE PURSING OF THE LIPS.

A very singular motion in both children and adults is the protruding of the lips to indicate concentrated attention. I have seen old men, while playing the piano, purse their mouths and protrude their lips more than the nursling. The child does this when investigating any new plaything. Whatever causes this singular change of the mouth, it surely indicates an act of concentrated attention, but it shows itself earlier than the power of investigation. I once saw a child in the first hour of his

life protrude his lips, and this, when not connected with the pursing of the mouth in sucking, must be regarded as purely impulsive. My child did this distinctly on the tenth day, when a candle was brought near him while bathing, and he continued the motion till four years old. In sucking, the mouth, like a snout, moves forwards and backwards.

The movements of the tongue, which many children make while learning to write, I observed much later. The mere observance of objects produced the pursing of the mouth from the sixth to the tenth month; after this, it occurred only when handling and turning objects under his observation, or when following the motions of an object, or in opening and closing boxes, in emptying and filling them, when stringing buttons or playing with them. The *pursing* of the mouth differs greatly from *pouting* it. The protruded lips of a dissatisfied child, like those of a chimpanzee which I observed in a zoölogical garden, and which is described by Darwin, is seen much later in life. What, then, precedes them? It must be that facial irritations were inherited. They are not imitated; my child never saw this pursing of the mouth, and was unable to imitate before the fifteenth week. If it was inherited, it is referable to ancestry. All animals concentrate their first attention on their food. Their first investigators are the lips, feelers, snout, or tongue. This examination of the food belongs to the activity of the mouth and its aids. Especially in suck-

ing, which first awakens the attention of the baby, the mouth is protruded; afterwards, when new objects come within the reach of his grasp, they are carried to the mouth; because, at first, all that interested the child, its food, was carried there. The conclusion that all interesting objects do not belong to the mouth is shown by the experience that many beautiful objects do not belong there.

Another pursing of the mouth is perceived in kissing. This belongs to the later acquired motions, which are seemingly not inherited. Among some human races it might be called conventional. How little the child understands the meaning of kissing, though he has been kissed by his friends thousands of times, is shown by many observations. A little girl, fourteen months old, kissed, as a purely affectionate expression, so that it could be heard, tenderly stroking the cheeks or hands of her mother, when wishing to get something or to please. In the fifteenth month the child kissed her mother twelve times a day, without being requested to do so. Her sister, unrequested, at fifteen months old, kissed her mother's hand eight times in succession. The two sisters often kissed each other for amusement when from one and a half to three and a half years old. Another baby girl responded to a kiss in her tenth month without hesitancy. On the eleventh day, when kissed by his mother, my boy took her lips and sucked them; on the thirty-second day the child did not suck the lips when kissed, but

showed pleasure at the caress. In the thirty-third week the child, when kissed, did not resist, and gave no signs of returning it, though there was no lack of affection.

In the twelfth month the opening of the mouth in kissing was imitated. In the thirteenth month the child had no conception of the meaning of a kiss, the caress not pleasing the child, as it always turned away its head when kissed. In the fifteenth, the words, "Give a kiss," were followed by an approach of the head and movement of the lips, which showed the understanding of the words but not of the act. In the nineteenth month if strangers desired a kiss, he held back.

The twentieth month, in touching the cheeks of others with his face, the child showed that the approach seemed to him the more important part. When told to kiss, he also bent his head toward the speaker, without opening his mouth. In the twenty-third, the meaning of a kiss as a sign of favor was known to the child, but he was as exclusive in kissing as in offering his hand. In the thirty-fourth, a feeling of gratitude was awakened. On receiving kindness, the child would kiss with a charmingly grateful expression, but without speaking. This signified that, in the beginning, the lips of the mother were only regarded like any other object. Then they were licked in doglike manner. Next a kiss was endured, then refused, and finally given as a sign of gratitude and affection, and this from a boy neither trained nor very affectionate. This long period of learning to

kiss proves fully what little foundation the presumption has, that kissing is to be regarded as an inherited peculiarity of mankind. It is a well-known fact that newly born children do not weep nor shed tears, however much they may cry later; children cry and weep at the same time, and are able, in fact, to cry without shedding tears, and still later they may shed tears and not cry. The time of the first shedding of tears is surprisingly different in children. Darwin observed that in two cases the eyes were found wet with tears for the first time at the end of the eighth or ninth week.

Not weeping but sobbing appears still later, with other causes of weeping, as stubbornness, grief, rage, but do not affect, as they do not exist in, any young child, while pain, which exists from the first, is expressed by shedding of tears. However, it is easy to understand that children of two or three years old shed tears at some unpleasant impression easier than those of six months or a year old.

As regards crying and weeping, there are two characteristics of the explanation and definition which has given much trouble; these are, the drawing down the corners of the mouth and frowning.

Of the peculiar compression or depression of the corners of the mouth directly following an act of crying and weeping, I spoke already, in describing the unpleasant feeling of childhood.

Frowning is invariably connected with weeping. The

eye, when closely pressed together, shows discontented feelings, and it should be understood as such. I observed it in my boy the first, second, seventh, and tenth days, as in some apes, without any outward cause. Otherwise, frowning is not the same as in adults. It is not necessary to consider frowning as important to expression, though it comes very often with crying, but sometimes without it. I observed on my own boy vertical and horizontal lines when nine weeks and seven months old.

The frowning, as a mark of astonishment, I saw in the twentieth month, in its full characteristic, namely, cross-fold, which Darwin ascribes to the long-inherited expressive motions (contraction of the corrugators) of closing the eyes to protect them, which had finally associated itself with the conception of unpleasant feelings.

THE SHAKING OF THE HEAD, AND NODDING.

The shaking of the head, as a sign of refusal or the reverse, is used by many children without any instruction or imitation. The forerunner of this expression, indicating dislike and disgust, prior to refusal, is, according to Darwin, the turning aside of the head in refusing food, either the breast or the bottle. In the same manner the head is early turned towards a window and after moving objects, and later from interest in new sounds. I observed in the first week during nursing a kind of wobbling movements of the head. On the eighth day they seemed

to indicate seeking; but they were unchanged on the twenty-seventh day, when the opening of the bottle was directly carried to his mouth, showing that it is not an acquired movement, but an instinct. Many animals wobble with their head when sucking, like man. It seems, therefore, an inherited, not a reflex, motion. Numerous side motions of the head are shown from the fourth day, supplemented by the turning of the head. My child refused to take the left breast at the fifth day, because it was inconvenient; it did so by turning its head away from it. On the sixth day it cried; on the seventh day we succeeded in conquering its resistance. However, the turning of the head remained forever a sign of refusal. It was always observed when satisfied, which never would have been the case had it been a reflex mechanism of reflection. The child clearly expressed a disgust towards its food, saying, "No more." Yet not before the sixteenth week I observed similar motions to those employed in refusing by adults. Nodding was still more seldom; it indicated just a little affirmation, then the sideward motions of refusal seemed to be mere muscular exercises. After some months the boy made refusing motions with his arms, as a person does to whom an object becomes tiresome. The child not wishing an object presented to him, lifted his arms sidewise two or three times, turning his head away. This motion of refusal at the age of fifteen months may have been acquired, that is, imitated, as the child may have experienced the push-

ing away of his own hands by his nurse ; and unquestionably he had gained sufficient observation for this, as with a conception of the idea of a refusal the act of a negative motion is quite early connected. When my boy, eighteen months old, in a rage tried to strike a person who refused to give him a key he asked for, he had not had an example to imitate, no more than when he threw himself on the floor and flung his arms and legs around and screamed violently, just as a chimpanzee did to whom an apple had been refused. Similar excesses were observed in children, with their faces flushing at ten or eleven months old.

The half-closed eyelid when refusing was not from imitation. I observed this when my boy was eight months old, especially when meeting black-dressed ladies, though they were very kind. This he continued till he was thirty months old, showing that his expression did not indicate fear, but antipathy.

In the eleventh and thirteenth months he said, "No, no"; but an affirmative consent was not expressed by, "Yes, yes." Notwithstanding many efforts, this was not accomplished till he was fourteen months old. In the sixteenth month it was correctly done, together with a peculiar rhythmical motion of the hand, which was very carefully executed, indicating a conscious association. That the nodding of the head meant "Yes" was not understood; yet the negative "shaking" was used when sixteen months old for "No," and "I do not know";

also, "I do not want it." When four years old, nodding of the head indicated, "Thank you." This is so much more surprising, as both these motions were considered original. That children make an earlier use of their voice than of movements of their heads, does not prove that they are antagonistic, but that the refusing side-wise turning of the head is to be considered a reflex instinct, while the later acquired affirming or consenting, the grateful bending of the head, are gestures of unknown origin.

THE SHRUGGING OF THE SHOULDERS.

At fifteen months old my boy shrugged his shoulders quickly. I thought the motion was caused by uncomfortable clothing, but the tranquil expression of the face did not correspond. In saying, "Yes, yes," to him and nodding, he repeated the nodding. This made me believe that the shrugging of the shoulders might give expression to "not knowing," which proved to be so in many cases, and it must be therefore counted among the many inexplicable inherited expressive motions not found in very young children.

BEGGING WITH THE HANDS.

This is generally the first trained motion of German children, placing both hands together in applying for something, and one of the first ideas the child is led to understand. *It is very early taught* that this SIMPLE

MOTION *quicken*s the bringing of his food in a much *higher degree* than CRYING; he therefore learns to make this motion when he desires something. At fifteen months he had been crying in vain for quite a while, when he suddenly stopped; and placing his hands in a begging position, he was attended to immediately. At fourteen and a half months old, when not crying, he begged also by pushing forwards his little arms, supplementing it by producing some winning noises, especially when he wished the repetition of funny actions. For instance, when some one put a spoon on his nose, the child laughed loud, grasped for the spoon, looked at it carefully, putting it from one hand into the other, and returned it with an inexpressible, begging, significant sound. After the child had fully learned to use the word "please," at twenty-two months old, the begging position, that is, the lifting of both hands placed close together, did not cease. It appeared when he wanted more music. When the train was stopping, he really clapped his hands. When he had reached the age of twenty-three months, it was repeated in his dreams. The expression of satisfaction in clapping the hands by adults may be connected with the noise made; but folding the hands in prayer as done in churches, as well as the lifting the arms of the praying Moslem, corresponds with the begging motions of the child, which by no means should be educationally neglected.

The child first demanded by crying, afterwards by

stretching, then by placing its hands together. These later motions the educator uses for begging and praying. The child finally comprehends the meaning, and adopts the movements. With increasing interest towards living objects, the child repeats the movements, opens his mouth in astonishment, and stretches his arms toward the object. At this period it becomes difficult to know if the child wants to *grasp* or to *show*.

On asking where is the light, he will at nine months turn his head towards it; but at fourteen months old he lifts his arms, and with wide-open fingers points to the direction. He had separated the idea of grasping from showing. It is of greatest importance in the mental development of the child that the *pointing* before the first attempts of speaking should be clearly and justly understood by the child. A little girl eleven months old, unable to speak, answered every question unmistakably correctly by the motions of her eyes and fingers.

Later, pointing was used, as does a deaf-mute. My boy, twenty-two months old, unable to speak, pointed from the milk-can to the bottle with his forefinger, expressing his desire for milk. Why did he use so suddenly one finger, instead of stretching out all five?

How much must the combination of fixing, opening the mouth, lifting the eyelid, stretching the fingers, be based on inherited co-ordination, acts essential to the acquisition of food to which pointing and grasping are also to aid? The child having learned to see his

outstretched arms recognized as a sign of wanting food or wishing to change his place, he stretched out his arms longingly, and whined when tempted to desire other objects. My child, when twenty-two months old, was desirous of being placed at the table. No one noticed his desire. He went into a corner, and with great difficulty he brought a chair forwards till he had reached the table, and slapped it with his flat hand, and did not rest till it was placed on the table. The child thereby spoke clearly without the use of words; unfortunately, in being led to perform some tricks he had been taught (Kunststücke), he gained success, but alas, he was also led to learn that he was liable to mistakes. With the increasing power of variation in voice, the child became more enabled to connect sounds with gestures. At fourteen months, the child connected the stretching of the arms with a sound of begging, and a longing look with a bent position, as expression of a strong desire. The increase of language finally did away with gestures. When he was fifteen months old, I made three glasses sound an accord by striking them with a ring. The child was delighted. I made a pause. He took the ring, but returned it, expressing by his peculiar sound of "hae-æ" his desire for repetition; his language was fully comprehensible without words. If such language is ignored, *in fact, remains unanswered*, some lively children will fall into a perfect rage, throwing themselves on the floor and scream. This language without words shows

by position of the body, the looks, the movement of the finger, the very character of his nature and will. For example, at fourteen months old his affections were expressed by putting his hands softly on shoulder or cheek, not very likely to have been acquired by imitation. Anger and disobedience were expressed by a continued stretching himself straight, as in the eighth month, when put to bed, he was made ashamed of having failed in cleanliness. Pride in a new baby carriage was shown by a quite ridiculous position, in the nineteenth month; jealousy, pride, pleasure in fighting, and selfishness, giving his childish face a not less characteristic appearance than generosity, obedience, or ambition, and can therefore not be described in their great manifoldness. Not merely the expression but the peculiar movements are characteristic; as they are so much more visible and without the intention to deceive, they are true. It is beyond the limit of this work to follow the connection of these mental conditions, the motives, and the growth of the power of will. Many observations have to be made before we can learn how far influence of imitation and hereditary influences affect emotional control in inducing harmonious conditions of feeling and character.

CHAPTER XIV.

INTENDED MOVEMENTS.

PREYER refers to the combination of impulsive, peripheric irritation, the instinct of imitation, and of emotions as causes of muscular contractions, with which intentions and a large number of motor sensations are to be experienced and connected and finally supplemented by the activity of the senses and reason to a certain degree, before any considered or free act can be accomplished. He says: "Therefore I cannot refer to any motion accomplished by free will in the child before three months old, or even more; there are doubts if the child's motions are not rather instinctive, therefore inherited or reflex, or perhaps impulsive."

Early grasping movements with the hands, not with its feet, seem to indicate seeking, and are, in the same degree as the later plucking and scratching of the face or skin, or other objects, not conscious, but instinctive to the act of grasping. Even the stamping with the foot, the moving of the chair, the stiffening of its body in opposition to the laying down against its will at ten months old, and still later motions of throwing, cannot be ascribed to self-conscious muscular movements with

any certainty. Probably some play induces more development of self-conscious attention after the first awakening of causal functions. Eleven months old, my boy happened to push a spoon against a newspaper, or other objects, and suddenly changed them, giving the impression of trying to find out which way the noise occurred, or if continued when the objects were laid aside, or if it was accomplished by the arm. For this reason, he kept his arm still, to see if the noise would still go on.

The restless experiments of little children, even of the nursling, as, for instance, the rumpling of paper, at six months old, are not only useful, but not to be replaced by the intellectual development of the child. The formation of will is likewise dependent on knowledge gradually gained in the discrimination between useless or useful co-ordinate motions; the utility of co-ordinate motions directed to a distinct aim or end is thus learned. It is only when the conception of the motion and the effect of the motion are understood, that independent self-movements are possible. This is, unfortunately, too often prevented by an early training, thereby making those actions mechanical which should be the result of individual conception and suggestion. Sometimes in the second year it is difficult to decide if the child acts independently or not, as, when ten or eleven months old, it opened or closed a wardrobe, and picked up objects from the floor and returned them. However, when he put an ear-ring which he had found, of his own accord, on his

ear, he knew that it was from an ear it had dropped. I call this a sign of conclusion, reason, and will; why, in the mere making of noise by opening or closing a lid, and in the tearing of newspapers, the mere pleasure in noise and motion and the satisfaction of the use of strength and will, was seen to be active. But it seems remarkable that my child, when fourteen months old, opened and closed the lid of a demijohn not less than seventy-nine times without pausing a minute; the concentrated attention proving the associated intellect. "What caused this noise?" would the child have asked, if able to speak; as he did, when he could speak, in saying, "What makes it?"

The child, without the knowledge of language, could think like the intelligent animal, with this exception, that the latter would not have lifted the lid so often for its own instruction. Doubtless, long before the acquiring of language, the child is conscious of will, and thinks; gradually, after prolonged and incomplete activity of the coordinating power of conscious and unconscious muscular movements, independent actions are performed. The sensations of pleasure and displeasure, such as the pleasure of reaching after food or preventing some discomfort, determine mental development. They have to be considered as the aims of a continual progressive evolution; in this sense, the successive development of the child's will, as, for instance, the grasping in the independent taking of food, showing the interesting transition from an incom-

plete co-ordination to the complete harmonious movement of the arm, mouth, tongue, throat muscles. The observations I made on my own child prove that there is *will* before the co-ordination is completed. In the fifth month, meat offered on a fork was seized by the hand, sometimes wrongly, but once rightly, and slowly brought to the mouth. In the eleventh month the child took every day a biscuit with his own hand from the table, and carried it rightly to his mouth. It also bit pieces off and chewed them, and drank from a glass. Eighteen months, he filled a spoon nicely, and carried it to his mouth. When the spoon was placed on the left side of the plate, he took it, after a short consideration, in his left hand. There was no difference between eating with the right or left hand.

Twentieth month, the eating with the spoon improved daily in safety and quickness, but he was not quite able to take his food without assistance and direction, as he could not fill his spoon well, because his attention was not sufficiently concentrated. He paused often, directing his attention to any shining object when in new surroundings.

After this, when intentionally left to self-help, the child improved greatly. However, the foregoing statements are sufficient to show that the intention existed before the co-ordination was perfected. The will, the knowledge of effect, the conception of the whole movement, were clear before it could be carried out, as seen

in gymnastics and play. Preyer says: "I could mention numerous motions, differing in self-conscious or instinctive origin, especially after watching children's plays and occupations from day to day, from week to week." But I have made already so many detailed statements, and such observations are so easily made, that it seems unnecessary to multiply them, if only sufficient time is taken by parents to compare a few healthy children.

It seems desirable for non-scientific students, and those who may have neglected this part in the foregoing abstracts of Preyer, to refer to the complication of the act of will, based, —

1. On a clear conception of what is desired, by the power of picturing to the mind the differences between the desired and other objects.

2. On a clear conception of the necessity of reaching after this desired object by adjusted movements.

3. On a clear conception of how to accomplish these motions.

4. On the power to connect this mental conception with the practical execution of certain motions to a certain end.

Investigating, in each simple, even in the first, action of her child, this complexity of efforts, no mother can fail to feel an earnest educational obligation to give the needed assistance in this wonderful process, with that reverence and conscientiousness which perceive in these first efforts the future weal and woe of her child, in

regard to which Froebel says: "It is impossible to undo in the second year what has been done wrong in the first year, by merely heaping one wrong on the top of the other." The following table of Preyer, which is copied, may serve mothers for a similar aim:—

MOTIONS	No trace of will.	First attempt.	With reflection and success.	REMARKS.
Shaking of the head		4th day	16th w'k	
Holding the head	10th w'k	11th w'k	16th "	
Grasping	17th "	18th "	77th "	
Rising the upper part of the body	12th "	19th "	5th m'th	No support on its back.
Pointing	17th "	35th "	39th w'k	
Sitting	13th "	19th "	39th "	Without any support.
Standing	21st "	23d "	48th "	Entirely free.
Walking	40th "	41st "	65th "	Alone and free.
Lifting himself up	13th "	28th "	70th "	Without help.
Stepping over threshold	65th "	68th "	70th "	Free.
Kissing	11th m'th	12th m'th	23d m'th	
Climbing	24th "	26th "	27th "	Without help.
Jumping	24th "	27th "	28th "	No help.

CHAPTER XV.

SUMMARY OF THE GENERAL RESULTS.

THE innate movements of every human being, although of various kinds, are alike for a short time both before and after birth, but more free than in the ovum, and modified by atmospheric breathing. These movements are impulsive, such as purposeless motions of the arms and legs of those newly born and their grimaces, all motor nerves seeming to take a part in these muscular contractions. They are, however, reflex movements, which they receive only from peripheral impressions, as light, sound, touch, most motor nerves likewise taking part in them.

A third kind of innate movements are instinctive, such as sucking and licking. In new-born animals, especially in young chicks, the instinctive movements are much more complete, especially as regards visual perceptions. The eye of a bird in its embryonic state is much larger, compared with its brain, than is the case in man. Although these impressions result in such apparently voluntary motions as picking, no movement of a new animal or child is deliberate, such movements being possible only after a sufficient development of the senses. Every

impression being then full, and compared with other impressions, antecedent and subsequent, its cause is also recognized, and thus becomes a thought. Without the power of thought there is no will, without activity of the senses no thought, and thus the will is inseparable from the senses, disappearing with their disappearance, as is seen in an individual fast asleep.

Notwithstanding that the will is dependent on the senses, it does not follow that their highly developed activity brings along with it a developed will. Intentional motions occur only after the first three months of life; they arise gradually, but not, as it were, by sudden inspiration. Such movements, which surprise the spectator, have previously, when not noticed by him, been often made, first unintentionally, then singly, thoughts arising at the same time and ultimately in combination with them.

The more permeable certain nerves have become by frequently repeated motions, the greater resistance will be encountered when they are connected with others. Witness the exactness, never repeated in later times, with which children imitate (when about four years old) the accent, pronunciation, tone, of foreign words or dialects of their native tongue. It is wrong to say of a new-born child that it desires something.

A child's attention is like that of an adult, either compulsory (caused by strong sensual impressions) or voluntary, the former occurring during the first three weeks of life in man only.

In controlling a child's conceptions, and substituting better ones for such as are inadequate, the weakness of its will has to be taken into account. In that respect the striking credulity, docility, obsequiousness, and but slight independence of will in small children finds its parallel in the behavior of magnetized adults. If a child about two and a half years old, after having eaten part of some food, is suddenly told when about to take another bite, "You have had enough," it will happen that it stops eating. In the same way, it is easy to persuade children of three or four that a certain pain they are suffering is over, that they are not tired, not thirsty, provided the assertion is made with sufficient decision. Hence, little children cannot be magnetized, their power of will being too slight for continued attention.

By the fatigue consequent on continued attention, we can account for the rapid change of a child's games. Too frequent indulgence in this respect, however unobjectionable at the outset, becomes an impediment in the cultivation of those voluntary checks which are most important for the formation of character, and self-will is fostered. Practice in obedience cannot begin too soon, and during my daily observations, continued for six years, I have noticed no drawback to early consistent guidance of the germinating will, provided such guidance be combined with the greatest possible gentleness and justice, as though a very baby had an insight into the usefulness of obedience. By the supposition of such insight, a

child's insight is awakened sooner than by training and by assigning a true and reasonable ground for every command; just as intelligence is begot by the avoidance of all groundless prohibition, obedience is essentially facilitated.

By cultivating conceptions of a higher order, the will can be guided already in the second year of a child's life, and its character thus be formed.

THIRD PART.

ON THE EVOLUTION OF THE INTELLECT.

The evolution of the intellect depends so very much on the influence exerted upon inborn dispositions by natural surroundings and by education long before the beginning of systematic instruction, and the methods of education are so manifold, that it is not possible to give a complete account of a normal intellectual development. Such an account would have to embrace two grades: —

1. The combining of impressions with perceptions, which consists essentially in the co-ordination of outward sensation by the intellect in space and time.
2. The combining perceptions with conceptions.

The investigation of either of these grades is so great a task that a single individual may enter upon it, but cannot easily carry it out evenly in all directions.

In my search for facts, I found but very little that can be relied on, and I therefore confined myself to what observations I have made on my own child. As I have omitted whatever is doubtful, I consider every detail trustworthy, nor have any such observations regarding mental development of a child ever been published to so full an extent. At the same time, I have become acquainted with enough other children to be certain that, at least, generally speaking, the child so observed did not differ from other healthy and intelligent boys, notwithstanding considerable difference in the time and rapidity of development. It would seem that girls learn sooner to speak than boys; whereas, they seem to possess less power of developing logical functions, or of forming abstractions of a higher order, the emotions are not so finely shaded off in boys as in girls.

Without considering such differences, the following chapters treat exclusively of the development of the brain's intellectual activity during the first years of life in both sexes. I have, however, found the inquiry into the influence of emotions on the development of a child's intellect so difficult that I have in the mean time not taken any account of it.

The observations concern the child's intellect, independent of language, the acquisition of speech, and lastly, of the feeling of sense.

CHAPTER XVI.

THE CULTIVATION OF THE CHILD'S INTELLECT, INDEPENDENT OF LANGUAGE.

A WIDELY spread prejudice asserts "there is no intellect without language." To give a decision is difficult or impossible for the thinker who has long forgotten the time when he learned how to speak. For even he can, on having arrived at a conclusion, not admit that he has been thinking without words. A child not yet capable of speech learns how to think of its own accord, as it so learns how to see and hear. If thinking is "inward speaking," there is speech without words.

Memory, the connection of cause and effect, intended and considered movements, for the purpose of diminishing exertion, must in a greater or less degree be ascribed to the child, all of them independent of verbal speech. The, as it were, embryonic logic of a child has no need of words.

First in time comes memory, without which intellect is impossible. The sole material the intellect can dispose of is received by the senses, and given by the sensations; to initiate the lowest degree of intellectual activity, — comparison, — two unequal sensations have to

occur. But as the sensations which are to be compared cannot take place all at the same time, memory is requisite; that is, the recollection of former sensations necessary for comparison.

By *memory*, I designate the result of individual impressions and experiences as distinguished from instinct, which consists of inherited traces of ancestral experiences. All sensations leave behind them impressions made on the brain, some of which are but slight and easily obliterated by others, others strong and more permanent.

In the beginning of life the power of memory seems to be first exerted on taste (sweetness) and smell (the scent of milk). Next in order is sight, and later, hearing. A baby, when three or four months old, changes the expression of his face, expressive of astonishment, on being taken to a room not seen before. The new sensations of light, the different distribution of shade, excite his attention, no astonishment being visible when he is taken back to his former surroundings, which have lost the charm of novelty; that is, a certain recollection has been imprinted upon the baby's mind.

Before a healthy child is seven months old, he distinguishes human faces; first, that of his mother from that of his nurse, then that of his father whom he has seen less often, and all three faces from that of every stranger. How much sooner babies recognize and fol-

low with their eyes human faces and forms than other objects, has been often noticed.

A girl when but seven months old shows a good deal of interest when looking at pictures, pointing her little finger to the heads of human figures.

When not two months old my boy could localize his mother's face and voice; such recognition presupposes a very close connection of the pictures of memory.

A girl of eleven months recognized at once, amidst sounds of joy, her nurse, after an absence of six days; and another girl, nine months old, her father, after a separation of four days. My boy, when but six months old, did not recognize his nurse after an absence of four weeks; whereas, another child, only four months old, noticed the absence of his nurse, which lasted only one day, in the evening; cried very much, after his discovery, looking about everywhere in the room, amidst renewed cries on finding his search futile. The same child, when ten months old, showed indifference to his parents after an absence. When one of nine pins was taken away, the child noticed it, and at the age of eighteen months he knew immediately whether his ten animals were complete or not. When nineteen and twenty-one months old, respectively, my boy knew his father at once from a distance, after an absence of several days, and once after an absence of two weeks; and when twenty-three months old he showed great joy on seeing again toys which he had not seen for more than eleven weeks,

having been from home with his parents; all this notwithstanding his otherwise great forgetfulness. Often a favorite toy could be taken from him without his noticing or asking for it. But when, in his eighteenth month, after having been accustomed to carry two towels to his mother, which he afterwards had to take back to their former place, on one occasion, he received back only one, he came forward with questioning look and tone of voice, to fetch the other. An observation of this kind proves the high development of memory for connected conceptions of sight and motion without any knowledge of the corresponding words. Such artificial associations, however, are soon forgotten unless continually renewed.

Often what has recently been committed to memory, such as verses, can be sometimes more fluently recited in sleep than during waking: witness a girl three years and five months old who could not repeat without hesitation a birthday poem of five lines, but repeated them aloud and without interruption in her sleep the following night.

Notwithstanding the absence of accurate observations, it is generally asserted that an adult can remember only as far back as the fourth year of his life. No one has any recollection of his former incapacity of balancing his head, of turning round, of sitting, standing, walking, difficulty of hearing and of distinguishing his body from other objects.

A child's reasoning cannot be called illogical, however

awkward it may be. An adult wishing to water flowers will first see whether his watering-pot contains water; whereas, an infant of a year and a half, witnessing the watering of plants, found great pleasure in going with the empty watering-pot from flower to flower, imagining to spread water, the notion "watering-pot" being identical in his mind with the conception "watering-pot full of water."

Much, therefore, that is ascribed to a child's imagination results essentially from the formation of indistinct conceptions, and because he is unable to combine constant attributes with sharply defined conceptions. When a child not yet two years old, holding an empty cup to his mouth, pretends to sip from it, such "play" results, in the first place, from the insufficient conception of "a full cup." Beverages, drinking utensils, and drinking have so often been perceived together, that when occurring singly they suggest each other; hence, the pleasure a child has in pouring out of empty jugs into, and in drinking out of, empty cups.

The ease with which children can be deceived is owing much more to want of experience than to want of intellect. When a child a year and a half old, after having held out some leaves to a sheep or a stag, a few days after on seeing a bird hop across the road offers to it quickly plucked blades of grass, presuming that it also will eat them out of his hand, it is wrong to call such an act "stupid"; it is a proof of ignorance, that is, inexpe-

rience; it is not illogical. The term "stupid" would be justified only if the child failed to learn ultimately the difference of the animals thus fed. On the other hand, when a child two and a half years old puts a watch first to his right, then to his left ear, and then pointing to the clock on the wall, exclaims with great joy, "The watch 's also going," such independent induction is rightly called a token of understanding.

The power of forming such abstractions may be noticed in children not yet one year old. A baby will be struck with the white appearance of milk, and "abstracting" or isolating this attribute from innumerable other impressions, combine it into a conception. When, some months later, it chooses some sound as an outward sign of this abstraction, this sign did not bring about the formation of the conception, but was subsequent to it. It would be interesting to collect observations concerning this power of reasoning in early childhood, while it is still uninterfered with by language, either for progress or the reverse, whereas there is a great lack of such observations. When a child, not yet two years old, on listening to a watch, exclaims for the first time, "Tick, tack," looking at the same time at the clock on the wall, it is not, as G. Lindner says, the "first, although empty and confused, conception" the child has formed, but it had the conception previously, to which it now for the first time gave a name.

The observation Darwin made in his child when one

hundred and forty-four days old, appeared to him as the first proof of a "kind of practical reflection." It was this: the child taking hold of his father's finger put it to his mouth, but his own hand hindered his sucking the finger. Instead of removing the hand, the child let it glide along the finger, whereby it was enabled to put the point of the finger into its mouth. As this proceeding was several times repeated, it was manifestly not accidental, but intentional. At the age of five months there arose associations of conceptions, independent of any instruction; as, for example, when the child had had his hat and cloak put on, it became very angry if it was not taken outside immediately.

Of the strength of logical reasoning without words, the following observations give evidence: when my boy, as well as another child, both fifteen months old, had burned his finger at a burning taper, he could not again be prevailed upon to approach his finger to the flame, but would sometimes, in play, move it in its direction, without touching it; he likewise (when eighteen months old) carried a piece of firewood to the door of the stove and shoved it inside, proudly looking at his parents. This surely is a case of something more than imitation.

Before he was fifteen months old he would never without screaming submit to have his mouth and chin wiped, but allowed the disagreeable operation to go on in silence ever after. He cannot but have noticed that it was over all the sooner, the more quiet he was.

Similar observations can be made with every infant, provided there is not too much talking, chastising, yielding, and spoiling. In his nineteenth month it happened that my boy one evening resisted the order to lie down. I let him cry, rise on his couch, but did not take him out, nor did I speak to him, nor use any violence, remaining near him all the time without any movement. At last he got tired, lay down and at once fell asleep. Thus was acquired the knowledge of the uselessness of screaming in order to escape obedience. He had learned to know what was right (permitted and enjoined) and was wrong (forbidden); at seventeen months his sense of cleanliness was strongly developed; and later (in his thirty-third month) he could not see without a strong protest his nurse acting counter to injunctions given to him alone, such as putting her knife to her mouth, or dipping bread into milk.

Feelings of this kind prove not so much the existence of a sense of duty, as the conviction that transgression of well-known rules of conduct have unpleasant consequences, that is, that certain acts bring along with them pleasurable feelings and others the reverse. I am sorry not to have succeeded in ascertaining by how much time they preceded the knowledge of words.

In many of the cases mentioned above and easily multiplied by assiduous observation, there is not the least sign of an influence of spoken words. The cases brought forward in this chapter, and observed by myself, prove

that a child's reasoning power attains a high degree without the knowledge of words; and there is no reason to consider the intelligent actions of children who cannot yet speak, that is, express their conceptions in words, but can already connect them with each other, as specifically different from the intelligent actions of clever orang-outangs and chimpanzees. Wherein the difference so consists is, that the latter cannot form so many nor such clear or abstract conceptions as the more endowed human child among men, *long before it has learned how to speak*. In consequence of speech, the gap is so much widened that what previously seemed in many respects almost human-like, now presents a loathsome caricature of man. In order, therefore, to understand the true difference between man and brute, it has to be discovered how a child or animal can have conceptions without words, and can adequately connect them; whether, for instance, it is done in recollected images, as in dreams; and an inquiry is needed into the manner of the acquisition of speech. Some insight may be had into the former important problem by investigating how children born deaf, the so-called deaf and dumb, form their conceptions.

For this purpose, I cannot do better than quote the words of Mr. C. Oehlwein, director of the Weimar Institution for the deaf and dumb:—

“In the first years of his life a deaf and dumb child looks at, turns about, and handles in all directions, ob-

jects exciting his attention. He goes near to such as are more distant, receiving in that way, like ordinary children, sensations and conceptions of sensations, and from the objects themselves a number of attributes, which he compares with each other, and with those of other objects, but always refers back to that one which happens to interest him. The influence this object has had on him by means of his sight and touch, he represents to other individuals by signs, appealing to sight and mediately also to touch, representing by his movements the object he has seen and felt. For this purpose he uses such means as nature has placed in the power of man : that is to say, his power to move the muscles of his face, his hands, and if need be, his feet. These signs, *self-formed and received, and not received by any instruction*, which the deaf-mute employs, are, as it were, the outline of the image he discovered, and are, therefore, a close representation of his mental state. Not only are, in the course of his sensations and perceptions, his own senses, his own observation and mode of conception, active, but the attributes of the objects observed by him are, according to his particular endowments, likewise raised by him to conceptions, however incomplete, through comparison, separation, combination ; that is, by his own act, and both named and recognized by signs intelligible to himself. Thus is shown how the mental development of the deaf-mute is brought about by his want of hearing and language. It seems at first an advantage that the

sign with which he represents a conception is taken from the impression, from the image, from the representation which he himself has, or has had, such sign designating nothing foreign to him, but only that which has become his own. On the other hand, he has not that power of generalization ultimately acquired by an ordinary child, although, as it were, by an outward compulsion, as, for instance, when the former, by pointing to his own flesh and skin, designates also animal flesh and animal skin. A deaf-mute touches his lips when he means to represent something red, which sign applies equally to the redness of the sky, of pictures, wearing a pearl, flowers, etc."

But before a thinking deaf-mute has formed the notion of "red," he had acquired already the conceptions, "lip," "dress," "sky," "flower," etc.

To know how the intelligence of an ordinary child develops, and how greatly independent of spoken language is his manner of forming conceptions, a collection of such conceptions as uneducated deaf-mutes, unacquainted with either the finger alphabet or articulation, make known to others by means of their own gestures, is indispensable. But their language comprises "not only those various expressive changes of countenance, but also the different gesticulations, attitudes, directions, positions, and movements of all parts of the body by which a deaf-mute expresses his conceptions naturally, that is, *uninfluenced by any kind of education.*"

CHAPTER XVII.

HISTORY OF THE DEVELOPMENT OF SPEECH IN THE CHILD.

IF we compare the obstacles to speech occurring in the adult with the imperfections of speech characterizing the child, and also make the latter a subject of chronological observation, we shall discover the order in which the different portions of the articulating apparatus come into action. The *impressive* and *expressive* * nerve-lines will first occupy our attention.

The new-born child is deaf, so that no sounds it makes can be regarded as answers to other sounds; its first cry is purely a reflex action, like the sound made by the decapitated frog whose back is stroked. This short period of deafness is followed by one in which cries express bodily conditions and feelings, like pain, hunger, and cold. Even here there is no connection between the expressive acts and the auditory impressions, but the vocal organs are used when other sensory nerves than those of hearing are unpleasantly affected, as when there is a dazzling light or bitter taste. Not until later does a sudden audi-

* *Impressive*, i. e., those occupied with auditory impressions; *expressive*, those relating to articulation.

tory impression (which formerly caused only a start, and subsequently a quivering of the eyelid) arouse an answering cry; and this also may be purely reflex.

Quite different is the first audible response to a newly recognized auditory impression, such as the sounds a child makes when it hears music for the first time. I regard this as the first sign of the newly completed connection between impressive (auditory) and expressive (emotional articulative) nerve-lines, although both were separately open long before.

We must now consider whether there is a firm *inter-central communication* between the two. If the child laughs and shows pleasure at the sound of music, its voice cannot be due to reflex action, since without the cerebrum it could neither laugh nor express joy. But this does not prove the existence of a center of speech (*sprachcentrum*) in the infant. The fact that it makes easily uttered sounds, only shows that the articulatory apparatus is in order, and that it is intentionally employed. The syllables aimlessly uttered during the first half-year are simple ones; during the first month we observe almost exclusively vowels, and often *m* is the chief representative of the consonants in the third month. Yet despite the simplicity of sounds, the child can frequently, often long before the seventh month, respond to questions, admonition, or reproof, either with inarticulate sounds or very simple syllables, like *pa, ta, ma, da*, etc. These cannot be purely reflex, like sneezing, as

they do not occur with microcephalous children, or those born deaf. They accordingly indicate a simple but unmistakably intellectual action of the cerebrum between the perception of the sound and the utterance. Besides, we notice that the infant behaves differently according as it hears a stern command or a caressing word, a prohibition or a permission; although it is the tone, accent, and pitch of the voice, more than the words, which attract its attention. Vowels are heard by the child much better than consonants during the first half-year.

Although all healthy infants, before they can repeat or understand a word, can express their feelings by various sounds and even syllables, and can distinguish vowels and a few consonants in the words they hear, yet they are not in this superior to the intelligent animal. The dog will bark or whine in response to petting or scolding, and has quite as clear an understanding of the various commands, Down! Fetch! Charge! Here! etc., as the infant has of the nursery vocabulary. Since each language expresses such commands by different terms, we see that there is no inherited connection between the quality of the sound heard and the act to be performed, as there perhaps is in the case of the runaway chicken, which follows the clucking of the hen.

Even before the articulating mechanism of the child is sufficiently developed for it to repeat the sounds heard, it will show its understanding of them by appropriate motions and gestures. In some children, on the

other hand, imitative articulation is developed somewhat earlier than comprehension, but this parrot-like speech can never occur before the fourth month, and only after some spoken word has already been understood. Lindner tells how, when he noticed that his eight-weeks-old child was observing the swinging pendulum of the clock, he carried him up to it, saying, "Tick-tack," in the rhythm of the pendulum; and how, when he afterwards repeated, "Tick-tack," the child would turn, at first slowly, but before long instantly towards the clock. In this case comprehension was shown long before the first attempt at imitation.

The inability of the child to repeat syllables cannot, shortly before he accomplishes the task, be ascribed to a purely physical incapacity, or to stupidity or weakness of will-power. The unsuccessful efforts he makes at imitation show that his will-power is not at fault. We observe from the sharpness of hearing, and the involuntary formation of the very sounds which are to be imitated, that the impressive and expressive nerve lines are developed and intact; so the cause of the inability must be a centro-motor one. The connection between the sound center and syllable center, and that of both with the motorium of speech, is not yet fully open. But the very first attempt at imitating a sound shows progress in the development of the brain, since no attempt at imitation, even of a single sound, can occur without the participation of the cerebrum. The first successful at-

tempt of this sort proves conclusively the establishment of inter-central connections between the sound and syllable centers and the motorium; but it tells us nothing with regard to the *comprehension* of the word repeated. We find that all children who can hear, but are not able to talk, repeat many words without understanding them, and understand many words without being able to repeat them.

It is certain that the majority of children whose hearing is good, develop the impressive more than the expressive, articulatory side. Probably those children who early become skillful imitators of sound are the first to learn to speak, and the ones whose cerebrum grows earliest and stops growing earliest; while those who are slower and less inclined to imitate, for the most part learn to speak later, but are more intelligent, for the brain grows more with higher mental activity. It is better developed when the child, instead of mechanically imitating words, tries to discover their meaning; and this period is the most interesting of the whole mental development. Just as the adult, who has partially learned a foreign language and hears it fluently spoken, can catch the meaning of a portion and imagine the sense of the whole, so the child will understand certain words, and by watching the expression and gestures of the speaker, will often divine the remainder of a sentence, showing its comprehension by gestures and cries, before it is able to speak a single intelligible word.

The cause of a healthy child's slowness to express in articulate words what it understands and desires is not due, as has often been supposed, to a slower development of the expressive motor mechanism, but to the difficulty of uniting the various central sensoriums (*Sinnes-Eindruck Magazine*) with the inter-central connecting line, which runs between the acoustic centers of speech and the motorium of speech.

The order in which the separate sounds independently appear varies greatly with different children.* But observations have shown that by far the greater majority of the sounds which a child uses after it has learned to talk, and many made in addition to these, are rightly formed by him within the first eight months of his existence, although quite without intention or aim. The plasticity of the youthful organs of speech renders this feat easy; and no child has been observed to proceed consistently in accordance with the principle of least effort, *i. e.*, from the more easily articulated sounds to those which are physiologically more difficult. On the contrary, it is probably true of all children who learn to talk, that they are obliged to relearn, by painstaking imitation, many sounds which they had uttered without effort during the period of infancy. Even the very syl-

* Prof. Preyer introduces a table, showing the order in which the different novel and consonant sounds were produced by his own child during the first twenty-seven months, as nearly as they could be observed and chronicled.

lables which the infant often repeats of its own accord till it is tired, like *da*, the older child is at first unable to produce, although its strenuous efforts show its great desire to do so. That he hears them correctly is proved by the confidence with which he responds, by appropriate gestures, to words of similar sound to each other, which might easily be confounded.

At this stage of its intellectual development, the child is superior to a very intelligent animal; not on account of its knowledge of speech, which it shares with the more intelligent portion of the brute creation, but because it already forms much more numerous and complex ideas. The period during which a strong, healthy child is on the same mental plane with animals closes, certainly, by the end of its first year. And long before this it has gained, through its inborn *sensations* of pleasure and pain, more or less accurate *concepts* in, at least, one department, that of food. This is probably the first notion which the infant obtains; and Romanes is correct in saying that the *idea* of food arises within us as a result of hunger, quite independently of speech.

Whoever has conscientiously watched the intellectual development of infants must be convinced that the formation of concepts does not go hand in hand with the acquisition of words, but is a necessary condition to the understanding of the first words that are to be learned. Long before the child understands a single word, before it consistently uses a syllable in a definite sense, it already

has a number of concepts which it expresses by looks, gestures, and cries. The association of touched and seen objects with impressions of taste is probably the first source of ideas. The *alalic* (non-articulating) toothless child has a lively interest in bottles, and when it sees a bottle filled with any white, opaque fluid (*e. g.*, water of lead), it cries and stretches out its arms for it, thinking it is a bottle of milk, as my child did in its thirty-first week. An empty bottle, or one containing water, is not nearly so attractive; that is, the concept of food arises at the sight of a bottle with definite contents, without any words whatever being understood or even uttered. The formation of ideas and concepts is thus shown to be independent of words.

It is not impossible that the making of concepts should continue after a total loss of verbal memory (as in the case of Lordat); but, nevertheless, it is certain that ideas of a higher order can only be formed by one who has completely mastered the art of speech. Intelligent mute children are acquainted with much more numerous and complicated concepts, but not many more of the higher abstractions than very intelligent animals, and adults whose vocabulary is small have no stronger power of abstraction than children. The latter learn abstract words more slowly than concrete ones, but retain them longer; for, when the memory fails, proper names and designations of concrete objects are first forgotten.

At all events, the intelligent mute child, even without

knowledge of words, can form abstractions of a lower order. When Sigismund showed his little son, less than a year old, a stuffed woodcock, and, pointing to it, said, "Bird," the child, who could not speak a word, looked instantly toward another part of the room where a stuffed owl stood. The idea was already formed here. But how little specialized the first ideas are which are independent of food we can see from the fact that with Lindner's child (in the tenth month), "up" meant also "down," and "warm," also "cold." If these instances, which are by no means uncommon, are not due to a failure to differentiate the ideas, "then," as Lindner says, "the child already has an instinctive feeling that antitheses are only the extremes of one and the same series of ideas."

Before the new-born babe is able to seek the pleasurable and avoid the painful, it expresses its feelings and needs by monotonous cries. These gradually vary, so that we are able to distinguish certain sounds as indicative of pleasure and pain. Then come spontaneously uttered syllables, and not until long after, the imitation of natural sounds. The imperfect utterance of these gives the effect of new terms, and since the child also uses familiar words in a new sense, his dialect gains an original aspect, and is called "baby talk." But it is important to remember that feelings and concepts do not now arise for the first time; they have simply reached their first articulate expression.

In adults new concepts generate new words, while with

the mute child they only excite new cries and motions of the face and muscles. Many conditions are often expressed by the same cry, just as a person affected with aphasia will often denote every mental state by one and the same word. Even when a person is fully master of his language, the words at his disposal are not always adequate to express his ideas, as when he desires to give a description of a cloud, or of a pain he is suffering. The idea is clear, but the words are insufficient. The bulk of philosophical and theological literature is due to the fact that different persons do not attach the same idea to the same word. If an idea is especially difficult to express clearly in words, *e. g.*, "die," it is designated by many different terms, which increase the confusion. But words are absolutely necessary for the clear conception of higher ideas and their accurate transfer to other persons; hence, it is important to know how the child learns first to utter and then to employ words.

We must note that it appears quite immaterial what syllables and words are employed to first designate the childish concepts. We can teach the child false terms, but it will use them loyally. If we should teach it later on that "twice three are five," it would only give the name of "five" to what is really six, and soon adopt the current phraseology.

For the first articulate expression of concepts, some of those easily uttered syllables are employed which have been previously uttered by the child without conscious-

ness or aim ; the meaning is introduced into them wholly by the parents or nurse. Such syllables are *pa* and *ma*, with their reduplications, *papa*, *mamma*, as appellations of the parents. The sense of these syllables varies more or less in different dialects, while in some languages the *ma* sound designates the father, and the *pa* or *ba* sound the mother. Similarly, the syllable "tata" is sometimes employed to denote the parents or grandparents, but often in the sense of "good by," "gone."

At this period the child has a strong inclination to mechanically repeat all sorts of sounds, syllables, and words, just as it imitates gestures. The ear assists this operation, but is not indispensable to it, since even those born deaf learn to speak by imitating the motions of the tongue and lips. This they often do better than the infant which can hear, since the latter depends very largely upon the sound. I have always found that it was very difficult for a child to imitate a position of the mouth which was not accompanied by the corresponding sound ; while if the acoustic effect was added, the task was easily accomplished. Accordingly, the connection between the ear and the center of speech must be freer than that between the eye and the center of speech. In the case of the child which does not yet talk, but which can repeat syllables correctly and begin to connect them with primitive concepts, the act of imitation takes longer than with the normal adult, although the nerve-lines in the brain are both absolutely and relatively shorter.

This is mainly because the arrangement and manipulation, in the center of auditory perception, of what is heard, or in the center of visual perception, of what is seen, requires a longer time in the child.

To the question, how the child proceeds to learn and employ words, we can reply: in the first place, it has concepts; secondly, it imitates sounds, syllables, and words; and thirdly, it unites the latter with those concepts. When, *e. g.*, the concept "white + moist + sweet + warm" has arisen from frequent sight, feeling, and taste of milk, it depends upon the syllables used to pacify the hungry infant, whether it expresses its desire for food by "mimi," "mamma," "nana" or some other form. The oftener it gains the concept *food* (*i. e.*, something which removes the disagreeable sensation of hunger), and at the same time hears the sound "milk," the more will the latter be associated with the former, until, in view of its being understood by all, this term is finally adopted. Thus the child learns the first words, and these always have a wider range of meaning than those he learns later.

In the above process the concept already exists, and only has to be expressed on hearing the appropriate word. The same result is reached by a second method, when a word, *e. g.*, "snow," is heard by the child, and repeated by him without any idea of its meaning, and then he is shown some actual snow, so that the empty word becomes connected with its

concept. This is a more difficult and artificial process than the first.

A third way is when concept and word present themselves almost simultaneously, as is the case with interjections and onomatopoeic * appellations. Wholly original onomatopoeic words are rare with children; appellations of animals, such as "bow-wow," "moo-moo," and "peep-peep" being taught to them by the parent or nurse. A few such names, however, like "cuckoo," "quack," are probably not infrequently formed by children of their own accord, although with less distinctness, and simple sounds are often imitated. Romanes reports an interesting case, where the mental process can be traced out more easily than usual. A child which was learning to talk, saw and heard a duck in the water, and said, "Quack." Then it called all birds and insects, and also all liquids "quack." Finally it extended this term also to all coins, after seeing an eagle on a French sou. Thus the child, by a process of generalization, came to designate a fly, wine, and a piece of money by the same onomatopoeic word, although none of them possessed the characteristic which had led to its adoption.

The manufacture of words from interjections only takes place where imitation also comes into play, as, *e. g.*, when the child notices a rolling ball or wheel, and

* "Onomatopoeic. Formed to resemble the sound of the thing signified." — *Webster's Unabridged.*

says, "Rollolo." The first interjection is always formed after hearing a *noise*, not simply from seeing, *e. g.*, a noiseless rolling object; so we must consider the interjections imitative.

On the whole, the way a child learns to talk is quite analogous to the way it later learns to write. Meaningless strokes and daubs are made, then certain strokes and phonetic signs are imitated. These cannot be immediately united into syllables, and even when they are, the resulting word is not understood. Yet the child could see every letter just as he afterwards learns to write it, before he learned to write at all. In just the same way, the child hears every sound before it can understand the syllables and words, and understands before it can utter them.

After children have acquired a small number of words by imitation, they furnish analogous and strictly logical forms of their independent manufacture. The preference of all children for the weak conjugation of verbs is a case in point.* The imagination is also a very prominent factor in word making.

It is interesting to observe how much the child can indicate by one and the same verbal expression. By the

* So an English-speaking child may say "tooked" for "took" or "taken," and "gived" for "given" or "gave." Similarly, regular instead of irregular comparatives are sometimes found by analogy, as "gooder" for "better," "badder" for "worse." Preyer's examples are, of course, German ones.

word "chair" may be meant "my chair is n't here," "my chair is broken," "I want to be lifted into the chair," "here is a chair." Steinthal's child (twenty-two months old), when it sees or hears a barking dog, says, "Barks," and intends to indicate by this one word the whole complex apparition, from its visible as well as its audible point of view. This many-sided application of a word, which thus takes the place of a whole sentence, denotes a much higher stage of comprehension than mere word-making. For it indicates a species of unconscious (although not necessarily clear) *judgment*. The union of ideas so as to form a conscious, clear judgment is shown by the formation of a *sentence*, whether this consists of one word or several. In this connection the erroneous impression must be corrected that all children, in learning to talk, use first substantives and then verbs. My child, which was observed daily, used an adjective for the first time in his twenty-third month, in order to express a judgment, the first to which he gave intelligible expression. He said, "Hot!" in the sense of "the milk is too hot."

The way words are employed in the first formation of sentences depends largely upon the adults by whom the child is surrounded. Lindner relates that when his little daughter was fourteen months old, she begged with her hands for a piece of apple; and, in giving it to her, the word "apple" was distinctly pronounced. Having eaten the first piece, the child begged for a second, re-enforcing

the gesture by saying, "Appu!" and her petition was again granted. Evidently encouraged by her success, the child now used the word "appu" in the general sense of "eat," "I want to eat"; "since," as Lindner says, "she found that this meaning was accepted by her friends; otherwise, the new word would probably have been lost."

This corroborates my previous statement, that a child can easily learn to make a logical use of wrong words.

Every child, in learning the language of those about it, learns also their linguistic peculiarities, imitating the accent, pronunciation, and dialect which it hears. This is so striking as to seem like an inherited tendency, while, as a matter of fact, only the voice is inherited, and the rest vanishes completely, if the child is brought up under different conditions.

We can say that the characteristic of speech is hereditary, as well as the power of articulation. If, however, in certain instances, the ear or the tongue refuses to perform its office, another language, of pantomime and writing and touch, takes the place of the normal one, and Broca's center of speech is never developed. We must deny that the mute child already possesses a center of speech, for this can only be formed when it hears speaking. In learning to talk there is a gradual development, first of the phonetic center, then of the syllable and word center and the dictorium. The brain grows through its own activity.

CHAPTER XVIII.

FIRST SOUNDS AND ATTEMPTS AT SPEECH OF A CHILD, OBSERVED DAILY DURING THE FIRST THREE YEARS OF HIS LIFE.

I GIVE as proofs the following observations, which I have noted down from Nov. 23, 1877, the day on which my boy was born.

In the first weeks the child would often cry aloud and long, as if displeased. The sounds seemed to resemble a short *u*, followed by a lengthened *eh*. These were uttered for five months in the same way, but more vigorously.

Notwithstanding their inequality, these sounds are so different from each other, even during the first five weeks, that they afford a sufficient indication whether the child is hungry, or in pain, or the reverse. Screaming, with eyes closed during hunger, whining during slight indisposition, laughing at bright objects in motion, that peculiar grunting, together with vivid motion of the arms, as signs of completed digestion and wetness (the latter continuing into the seventeenth month), must be considered the forerunners of future oral communication, in contradistinction to the sonorous reflex move-

ments, such as sneezing, belching, not infrequent snoring, sniffing (during sucking), and other loud expirations, noticed already during the first days, and of as little linguistic value as coughing, and in later times, clearing the throat.

On the sixth day already the voice evinces much power, especially when manifesting feelings of displeasure. Moreover, screaming becomes much more frequent, more lasting, and louder, when, instead of human, diluted cow's milk is given. If more attention is paid to the baby (during the first two months), he is afterwards more inclined to scream, which he does (as during hunger), otherwise than when announcing something unpleasant, as wetness, the cries subsiding when in consequence of having been wiped dry he feels a certain satisfaction. Otherwise, the desire to scream must be considered (at any rate from the tenth week) a sign of health (or increase of muscle). Protracted silence seems to result during this time from slight indisposition. My boy, however, had no serious ailing lasting more than a day.

On the forty-third day I heard the first consonant, the most distinct sound being, "*Am-ma*." On the same day he uttered the vowels, "*a o*," and on the next day we were surprised by hearing him distinctly utter, "*Ta-hoo*."

In the midst of his unintelligible cooing, I heard on the forty-sixth day, "*Go*," "*Oro*," and five days later, "*Ara*."

The syllable "*Ma*" I heard by itself only on the

sixty-fourth day amid screaming; later, "*Ny, ny, ny*," and once, "*A-omb*."

On the sixty-ninth day, while hungry, he repeated distinctly "*Mo*" and "*Ngo*."

The manifest sign of pleasure, "*Nabu*," was distinctly uttered on the seventy-eighth day, and later, "*Ah-ee*," "*U-a-o*," "*Eh-o-a*," in turn.

In the fifteenth week I heard, "*Na-na-na*" and "*Nanna*" by way of refusal, and as a sign of especial displeasure he would continuously shout, "*Ua-ua-ua-ua*."

With the exception of *k*, no new consonants were formed during the fifth month.

Stronger sounds of pleasure appeared, as "*Ha*," "*Bur-ha*," "*Ee-yah*."

At the age of eight months he uttered other sounds while screaming. In the ninth month there occurred the sounds, "*Orro*," "*Appa*," "*Ga-ou-a*."

In the eleventh month he correctly repeated some syllables impressively uttered before him, such as his own coinage, "*Adda*," when I repeated it.

In the forty-fifth week I noticed certain movements of his lips and tongue, which seemed to be attempts at repeating words spoken by others. As new syllables, I mention "*Ta-heh*," "*Dann-teh*," "*N'geh*," "*Dall*," "*Kamm*."

Such sounds as "*Atta*," "*Hodda*," "*Hatta*," he seemed to utter on perceiving that something disappeared from the room.

In the twelfth month I noted down the following sounds: "*Ha-ya*," "*Ya-ya-ya*," "*Pa-a*," "*Han-na*," "*Möm-ma*," "*Ka*," "*Ladn*," together with "*Atta*" in various modifications. When his name was uttered he would turn round, and although he did so on hearing other loud sounds, his face had not the same expression.

In the fifty-second week he offered his hand when bidden to do so, — a feat I have seen a child of seven months perform. During this whole time, from his birth forward, sounds like "*Sh*," "*S*," "*St*," "*Pst*," none of which were ever uttered by him, had a quieting effect.

"*Na-na*," which he uttered while putting out his arms, expressed some desire, and "*Ma-ma*" joy at seeing his mother. Cooing seemed to indicate desire of food, grunting of evacuation.

The most important progress consists in the newly awakened understanding of spoken words, certain movements forming his reply to words that had been spoken. An occasional exchange of these movements seemed to indicate that he had forgotten the special one previously made on hearing a certain word.

In the fourteenth month he would often say, "*Ta-ta*," on being carried away. My voice seemed to have made the impression on him, that he was expected to do what he was bidden. On being asked, "Where is your cupboard?" he would turn his head and look in the direction of the cupboard, and, although not yet able to walk by himself, would pull the person holding him by the hand

through the spacious room, and then open the cupboard without assistance. He is fond of striking the table with his hands; imitating his movements, I said, "Play the piano." When afterwards, he being quiet, I said, "Piano," without moving my hand, he reflected a few seconds, and again beat the table with his hand. When asked at the age of fifteen months, "Where is the moon? The watch? The eye? The nose?" he raised his arm, and spreading his fingers, looked into the different directions. When I speak of coughing, he coughs; of blowing, he blows; of kicking, he stretches his legs; of light, he blows into the air towards the lamp, if it happens to be in the room, looking at it. Only in consequence of frequent repetition and forced guidance he would nod his head in reply to "Yes," only when sixty-four weeks old, and for months this movement was made clumsily, whereas during "No, no," he would shake his head with as much assurance as an adult.

The eighteenth month showed a great increase in the power of distinguishing and understanding certain words. "Finger," "glass," "door," "sofa," "thermometer," "carpet," "biscuit," are correctly pointed at. Words spoken to him were as yet seldom repeated; in reply to "Mamma," he would say, "*Ta*." Although not easily reproduced in writing, the sounds uttered by him at this time designate, better than before, desire, grief, joy, hunger, obstinacy, fear.

In his nineteenth month, he took a newspaper from a

paper basket, spread it on the floor, and lying down upon it, face forward, uttered a variety of monotonous sounds; then tearing the paper into a great many small pieces, he betook himself to turning the leaves of books, uttering a series of other sounds.

Screams, such as he gave forth when cold water was poured on him in the bath-tub, were repeated after the first such attempt, already at the sight of the tub, sponge, and water. Although he would also scream after being put to bed, he soon ceased, on seeing its uselessness.

Instead of saying "*Ta*," or "*Ba*," in reply to "*Pa*," he could now repeat this syllable correctly.

Great progress was noticed in the twentieth month. On the five hundred and eighty-fourth day the child suddenly correctly repeated, without difficulty, words of two syllables. In the eighty-third week, after looking intently for two minutes at a bird in the garden, he repeated five or six times, pretty fairly, its chirping. Five days later, taking a cow, roughly cut out of wood, and no larger than the bird, he moved it on the table to and fro, and chirped in the manner of the bird he had seen. Hearing others laugh, no matter at what, the boy would regularly laugh, too.

All artificially taught movements — an evil not easily avoided in our fashionable mode of education — were suppressed as much as possible. He indulged very much in shouting aloud, as if he wanted to try the strength of his voice.

In the twenty-first month I noticed in his utterances more consonants than vowels. In the case of new words, I found it more difficult than formerly to discriminate between his unwillingness or inability of imitating sounds. "*Me-me*," a sound he had frequently uttered to designate milk, he now transferred to biscuit and other kinds of food.

When, in the twenty-third month, I said to him, "Drink," "Eat," "Shut," "Open," "Pick it up," "Turn round," "Sit down," "Run," he mostly obeyed immediately. The order "Come!" was less readily complied with, but not so much for want of understanding as from obstinacy. On my asking to show me his beard, he, after pointing to my beard, with some embarrassment put his finger on that part of his face where he perceived my beard to grow, at the same time moving his thumb and forefinger several times, as though holding between them, and tugging at a hair, as he had had occasion to do with me. Upon the whole, there was an increase in the variety of articulations, but the power of forming words out of syllables was but slightly developed. When preference was given to certain words, it was mainly owing to his surroundings, just as adults imitate the speech, dialect, and even voice much better of their own accord, than when asked to do so.

Before he was two years old, the words he uttered could often not be understood by strangers.

Another month brought with it unusual progress. He

had become more docile, although he did not always understand what was said to him. On being told, "Open the book," he would only tap the book with his hand. Having received a number of presents on his birthday, he would repeat the sound he had uttered on that day whenever he was delighted with anything. Having been told to blow on his hand, which he had slightly hurt, he, when the same afternoon he accidentally knocked his head, of his own accord at once began to blow.

In his twenty-sixth month, I put before him every day a large picture book with colored pictures, when he would repeat the names of such as were unknown to him. There was an increase of words of his own coinage, most of his sentences consisting of no more than two words. Conception of number was utterly wanting. The meaning of the word "thanks" he evidently did not understand, as he uttered it after having himself poured out some milk.

In the twenty-seventh month the growth of his reasoning powers became apparent. Being present at the felling of a large tree, he, on seeing it fall to the ground, exclaimed, "Pick up!" Seeing a hole in a dressing-gown, he said, "Sew." During play he often said to himself "Pay attention." Being asked, while still eating, "Do you like it?" he replied, "Like still."

As proof of the feeling of pity, I mention the following: On seeing figures cut out of paper, he would cry, amidst tears, for fear a head might be cut off. With-



out having been influenced by any one, he would exclaim, "Poor biscuit!" when a biscuit was broken in two, or, "Poor wood!" when a piece of wood was thrown into the stove.

Though often causing surprise by the manner in which he applied words he had recently heard, he did not always employ them correctly, as well saying, "Boiling hot," not only of milk, but also of the fire. When wishing to eat or play, he was more disposed to speak than when refusing something, because he would then go away, turn round, and turn his head. In the case of numbers, his memory still failed him, nor was there as yet ever a question asked by him.

The twenty-eighth month showed an increased power of forming conceptions, and of the use of words. Seeing an ox in the slaughter-house, he said "*Moo-moo*," and on my adding, "Dead," he replied, "Moo-moo, dead," and after a pause of his own accord, "Slaughtered," and then "Blood out." He had got into the habit of striking in sport those surrounding him. When, after having been forbidden to do so, he felt disposed to indulge this proclivity, he said emphatically, "Not beat," "*Axel*" (his name), "Brave." The interrogative "Where?" was for a long time the only one he had acquired, although he had for a long time preceding understood its meaning when addressed to him. Some Italian words like *uno*, *due*, *tre*, which he had heard the natives pronounce during a protracted stay at Lake Garda, he repeated correctly,

without the least German accent ; some others less accurately. As a proof of vivid imagination, I cite the fact that he would put to his mouth, as if about to drink, figures cut from newspapers, and intended to represent cups and glasses. .

The greatest progress I noticed in the twenty-ninth month was the use of the pronoun "me," instead of his name. There was also an increase in his power of dealing with numbers. On counting his nine-pins, he seemed to display a knowledge of addition, by saying, "One, one, one, one," and then, "One, one more, one more." Greater activity in questioning was also manifest, although his store of interrogatives was still restricted to "where." Instead of "two" he would say "five," and *vice versa*; the expression "too much" he would apply correctly, but also on such occasions as when there was too little bread or butter. Seeing some one about to light a taper, he would go for matches. When I said to him, "Pick up the crumbs," he seemed at first not to understand, but exclaimed, suddenly, "Fetch broom," went for the broom and swept away the crumbs.

The thirtieth month showed evidence of clearer conceptions. Playing by himself, he would say, "Make pail empty." Seeing the peeling of a roasted apple, he said, "Milk," also "Skin," recollecting some boiled milk, although not present. A similar expression was, "Church rings," when he heard the town clock strike. A key was dropped. The boy picking it up quickly, held it behind

him, and replied to my question, "Where is the key?" "No longer there," with a roguish look. The pronoun *I* had not yet been uttered. I account for it by the fact that adults, speaking to babies, instead of using it, will say, "Auntie," "Grandma," etc.

In the thirty-first month I found him more lavish in the use of questions, and also making some attempts to form sentences. When he had broken a flower-pot, a wooden box, or a glass, he always said of his own accord, "Frederick glue again."

In the thirty-second month I heard him, for the first time, say, "I." When he was asked, "Who is I?" he answered, "Axel." In his pronunciation of names of some length and of sentences, the influence and dialect of his surroundings would now and then become noticeable. His memory was improved, but somewhat more fastidious. He would forget some useless verses which he had been taught in fun, but seemed to understand what interested him.

In his thirty-third month I noted down as evidence of his improved memory, that, being absent from home, together with his parents, he said every evening, "Soldiers will play soon," although there was no trace of a soldier. Noticing a cock in his picture book, he said slowly, "That is the cock—he's always coming—takes away the whole piece out of the hand, and runs away"; all this with reference to the feeding of the chickens, when the cock had run away with a piece

of bread. At breakfast he stopped eating to observe the movements of a fly, saying, "Now goes to the newspaper — goes into the milk — away animal — go away — among the coffee." But not only animals, but other moving objects, such as locomotives, excited his attention.

Although continuing my observations after the one thousandth day, I did not always note them down. During the three succeeding months the child spoke more rarely of himself in the third person. He also made use of the interrogative "Why?" Hearing the creaking of a wheel, he asked, "What makes the noise?" Questioning now became very frequent, producing after every answer, which was never denied, new ones, which to adults would seem idle. Before the end of his third year I do not remember to ever have heard him ask, "When?" Words like "salon," "orange," and the French "*âge*," appear unsurmountable difficulties. A question, "Who taught you that?" he regularly answered, "I taught myself." Frequent grammatical mistakes occurred as a matter of course. When asked, "Who speaks like that?" He said deliberately, and amidst pauses, "Not — not — not — not — not — nobody."

Whatever observations I have noted down have been strictly verified by myself; frequent cross-examinations of nurses and other persons not used to scientific inquiry proving the unsatisfactoriness of their evidence, especially

with regard to the child's "forwardness." Much aid was afforded me by the child's mother, who is particularly endowed with the talent of observation. Each observation was at once entered into a journal ever at hand. Every artificial exertion was avoided, nor was the child aware that it was observed. As much as was possible, all artificial training was prevented, nor was my child tortured with learning by heart songs and such stuff as he could not understand.

CHAPTER XIX.

DEVELOPMENT OF THE EGO SENTIMENT.

BEFORE a child learns that the several members of its body are a part of itself, it must pass through many experiences, most of them more or less painful. My own child was four hundred and eight days old, when, standing in its bed, it bit its own arm until it screamed. Even in its twenty-third month it offered a biscuit to its own foot. Vierordt's conclusion that a child begins in its third month to discriminate between itself and the rest of the world, is not borne out by my experience. My child seemed to discover in the forty-first week that it was one thing to strike the table, another to strike its own head. When fully fifteen months old it wondered at its own experiment of pushing its head against the right and left hands it held just above the corresponding ears. Only just previously it had found out, by biting, the difference between its own and other people's fingers. It is a memorable day in the life of the child when it finds out that it can cause an effect, say, in tearing a piece of paper. The satisfaction it takes in such discoveries accounts for the patience and seriousness with which it will

repeat any little act that shows the child to be something of a free agent.

People call this *playing*; in truth, it is EXPERIMENTING. As the child finds that it is a cause, its ego sentiment arises. My own child began to discriminate between its own body and other things as follows: In the seventeenth week the child noticed both an object to be grasped and the grasping hand itself, especially when the grasp was successful; a week later it noticed its fingers; in the twenty-third week the child observed that one of its hands had seized the other; a week later it wondered at the difference between its hand and a glove; in the thirty-second week it contemplated its raised legs and feet as something strange; in its thirty-fifth week the child tried with both hands to seize its own foot and lift it to its mouth; in the thirty-sixth week it looked more upon other things than at its own hands and feet; in its fifty-fifth week the child noticed a person eating, felt the person's face and its own head, and then recognized its own hands; it compared its own fingers with those of other people. In its sixty-second week it played with its own hands, as if they were independent playthings.

When ten weeks old my boy did not recognize his own picture in a mirror. Only on the one hundred and thirteenth day he looked at the picture with attention; three days later he smiled at the picture; in the twenty-fourth week he recognized me in the mirror;

in the twenty-sixth week he compared my picture in the mirror with the original that stood beside him; in the fifty-seventh week he tried to find himself behind a hand-mirror I held before him. On the four hundred and second day I showed him his own photograph and his picture in the mirror, the effect being disquieting; but in the sixtieth week the child noticed the difference between its mother and her picture in the mirror. In the sixty-seventh week the boy made grimaces before a mirror; in the sixty-ninth week he showed pleasure at beholding himself in the mirror. The experiment was then discontinued; the child had manifestly learned to discriminate, in a measure, between itself and its picture.

Far more important for the development of the ego sentiment is the use of words. But the ego sentiment and the use of the pronoun *I* are by no means identical. The use of the *I* merely helps to differentiate and mark the ego sentiment. A little girl thirty months old said, "Lillie my tair," for "my chair"; my own boy, then thirty-one months old, spoke of himself as "Axel," "I," "he," and by omitting all pronouns, but this transitive stage was brief. Of course, all children begin rather late to speak of themselves and their future, when the ego sentiment has become fully self-conscious. All the steps indicated are on converging lines, that meet in the perfect feeling of the *I* as a distinct person, which is not to be confounded with the world at large.

What is the significance of the child's regarding his own hands, feet, and teeth as extra personal playthings, and of his biting his arm as he bites other objects? What part "regards"?

Where resides the biting impulse? Evidently the entity of the head differs from that of the body. The brain ego is a different one from the spinal marrow ego (Pflüger's "spinal marrow soul"). The brain ego sees, hears, tastes, smells and feels; the spinal ego feels only. And both are, at first (so long as they are connected with each other only loosely, organically and functionally not at all), quite isolated in their action.

Acephalic infants, who lived for hours and even for days, could suck, could cry, move their limbs, and feel, for when they were hungry they would seize upon and suck an object put into their mouths, and would cease crying while so doing. On the other hand, could a babe be born with a brain and without spinal marrow, and live, it would not be able to move its limbs. If, therefore, a normal nursling plays with its own toes and bites his arm as if it were a cracker, this proves that the brain, with its perceptive apparatus, is independent of the spinal system. And in the fact that acephalic new-born human beings and eviscerated lower animals move their limbs, cry, suck, and respond to reflex movements, quite the same as if completely organized, lies the proof that the spinal system, including the cervical (marrow) (cerebellum), is at first independent of the cerebral hemispheres.

Now, however, it is unquestioned that the brainless (acephalic) child, which cries, sucks, moves its limbs, discriminates between comfort and discomfort, has still an individuality, an ego. Hence, we must necessarily admit two egos in the child that has both brain and spinal system, and finds his own arm savory and bit-able; but if two, why not more? In the beginning, when the visual, auditory, olfactory, and gustatory nerve centers in the brain are still imperfectly developed, each of those perceives for itself, since the various conceptions in the various sense districts are not yet in communication with each other, just as the spinal system fails at first, or nearly fails, to report to the brain what it feels: for example, the effect of a pin sticking into the skin, for the new-born usually do not react against such impressions. It is only after the frequently simultaneous occurrence of separate sense impressions, as taste, touch, hearing, seeing, smelling, that the connecting fibers are developed between the different centers of special sense, and then only can the different centers of conception, as it were, ego formers, proceed from the ordinary notion-forming power to the notion of the unified ego, which is an abstract idea.

This abstract conception of self, or the ego, an idea possible only to the thinking adult, exists precisely as other notions exist; namely, as the result of the conjunction of single conceptions; as, for example, the forest exists by the presence of the individual trees.

The subordinate egos, which represent the separate senses, are, in the case of the little child, not yet blended together, because he lacks the power of abstraction. The sympathetic mutual excitation of the sensory centers by single excitations is not yet possible, because these centers are not stamped with enough memories, nor are the cerebral fibers connecting them abundant enough.

The special perceptions of all sense centers have, with all beings, whether fully endowed or possessing the use of either three or four senses, the common quality of taking place under conditions of time, space, and causation. This common quality presupposes similar processes in each separate sense center of the highest order.

Excitation of one of these centers easily occasions similar excitations in the centers which have already been many times simultaneously moved by impressions from the same objects, and it is this contemporaneous excitement of all those sense nerves which connect together the sense centers in the brain, which finally calls into being the complete idea of the ego.

The ego does not, then, according to this view, exist as a unit, as an undivided and uninterrupted entity; it exists only when the egos of the separate senses are awake out of which it is abstracted, and it vanishes otherwise; for example, during a dreamless sleep. In the waking state it is there as the result of central nerve activity and alertness. But above all, the ego is *not* a sum, for this presupposes the interchangeability of

the component parts; and clearly the seeing ego cannot be replaced by the hearing ego, any more than this by the smelling ego, etc. The sum of the individual leaves, stems, blossoms, and roots of the plant is far from being the plant. They must be arranged and related in a special manner. So, also, it does not suffice to add together the characteristics common to the individual senses, in order to produce out of this sum the administrative and governing ego. These result rather from the increasing number and manifoldness of the sense impressions, a constant growth of the gray substance of the child's cerebrum, a rapid increase of the inter-central connecting nerves, and thereby an easier association of ideas, by means of which the unity of the child's sensations, with his thinking and willing, is brought about. This unity is the *I*, the ego, the *self*, the perceiving and feeling, the desiring and determining, the recognizing and thinking *I*.

FINAL RESULTS.

Of all the facts established by my experiments and observations, none conflict more with traditional opinion than does the truth that ideas may be formed without the medium of language. At the very beginning of life man discriminates between pleasure and the opposite, and has definite sensations. The impression made by these sensations in their connection with congenital motions leads to the growth of memory. These congenital

motions are the starting-point of the infant mind, which discriminates between the motions both as to time and space. The infant soon learns the difference between "sweet" and "nursing"; it learns also the difference between feeding on the right or left breast, after one trial. This is the first act of the infant mind, its first *perception*; that is, the infant has perceived the difference in time and place between a sensation (*Empfindung*). As the objects of the infant perception multiply, the infant mind begins to discover causes. Its sensation becomes a mental perception, one of the first being to mark the specific, white, warm, sweet fluid. One of these notions excites the others; the child has a concept; for a concept (*Begriff*) is a combining of separate notions. Notions are perceived, and so firmly associated as to lead to a concept from a single notion. No language is needed in this process. Deaf infants are, in this respect, like infants that have all the senses.

These concepts are not congenital, but inherited, very much as are the beard and the teeth. As the teeth differ from the tooth rudiments of the new-born infant, so the concepts of man, clearly defined by words, differ from the ill-defined concepts of the speechless infant. This disposes of the old doctrine of innate ideas; they are not congenital, but inherited. The main point is the congenital talent for perceptions and concepts, that is, the congenital mind. By talent or foundation no more is to

be understood than a uniform mode of reaction or excitability, which in many succeeding generations has combined similar nervous activities. The brain enters the world with many stamps upon it, some of them distinct, others indistinct. Each ancestor adds his own to the stock. The useless stamps are extinguished by the useful stamps. But the arrangement of sense impressions is a mental act quite independent of speech, and the capacity for this act precedes the activity of the senses, as Kant was the first to perceive.

I affirm, on the basis of my own observations, that as a child can average its sense-perceptions, both as to time and place, without the use of words or other symbols, even so it can form concepts and operate logically without the aid of language. This discovery was made by Helmholtz. What he calls "unconscious conclusions" is a mental process that begins in the new-born infant with the activity of the senses. Perhaps one might say "unexpressed," or "speechless conclusions." Such perceptions, concepts, judgments, and conclusions may be inherited, especially such as one's ancestors have frequently experienced, not only without the use of language, but also without the employment of will-power. One cannot supply an inherited defect, nor get rid of the inherited mind. The talent for concepts and some of the first concepts are congenital; new concepts depend on new perceptions or experience, and begin before children learn to speak. The new-born child possesses the talent for

forming concepts, as the young chicken just out of its egg possesses the power to lay eggs.

It is quite certain that many concepts must be formed before the child can learn to speak. Every child discovers the specific method of expressing concepts in articulate sounds, but it does not invent this method; but if it grows up with speaking persons, the child will practice this method without instruction. A child that lacks the sense of hearing will have to learn speaking very much as most children learn writing, — by imitation. I think that the first firm combination of a concept and a syllable or a word is brought about by imitation only. This accomplished, the child makes combinations of its own, but rather less than is generally assumed. No one possesses that congenital genius which invents articulate speech; it is wonderful enough that imitation suffices to teach a child how to speak. I have investigated the conditions of this imitation of sounds and this learning to speak, and find, after a survey of the entire field, that *every known form of speech disturbance in adults has its counterpart in the child that learns speaking.*

The small child cannot as yet speak correctly, because its organs of speech are imperfectly developed; the disabled adult can no longer speak correctly, because his organs of speech are more or less impaired. The parallel is perfect, and leads to several inferences: *A normal infant understands spoken language much sooner than it can reproduce the sounds, syllables, and words it*

has heard; a normal child, before learning to speak or to reproduce spoken sounds correctly, forms spontaneously fully or nearly all the sounds of its future language, and many besides, and takes delight therein; the sequence of sounds as produced by the infant differs in individuals, and is not determined by the principle of the least effort. It depends on the brain, the teeth, the size of the tongue, etc. But the rule of the least effort operates later on in the deliberate formations of sound and in the language experiments.

In every complicated muscular motion the more difficult combinations are acquired last, as in dancing. Inheritance has nothing to do with this. For every child can fully master any particular language, provided it hears only that language from the hour of birth. The plasticity of the congenital organs of speech is very considerable. It is not my purpose to trace the influence of language upon the intellectual development of the child. But the questions asked by a child are usually underrated. When children begin to speak, they ask innumerable whys. These questions are entitled to a candid answer. Proper answers will lead to very intelligent questions, especially when the child is from five to seven years old. Joking or foolish answers lead to silly questions and illogical thinking. The only fable or myth I tell my child is the story about the stork bringing the babies and all the rest.

The ego sentiment in the child does not begin with its

use of the word *I* (the *I* is used sooner or later, according as the persons dealing with the child speak of themselves and one another in pronouns or by name), but after a long line of experiences the ego is distinguished from the non-ego by habituating the child to its own hands, feet, arms, legs, and body. In the beginning these are foreign objects to the child; gradually they lose the charm of novelty; the child receives impressions from the world at large, and this leads to the ego sentiment in the child. Thus the child rises above the state of animal dependence, particularly by its language. But even in the fully developed ego sentiment of the responsible adult, there is great satisfaction in recalling one's early childhood. For this teaches us our intimate relations to all living creation. However we rise, we seek in vain for a door into another world. But the mere thought of such another world shows the vast superiority of man over his fellow-creatures. The key to an understanding of the great mystery as to the connection of these extremes is found in the history of the development that marks the soul of the child.

Prof. Thierry William Preyer, the eminent physiologist, was born at Manchester, England, on July 4, 1841, received his education in Germany, studied medicine in Germany, Austria, and France, joined the university at Bonn, in 1865, as lecturer in zoochemistry and zoophysics, in 1867 as lecturer in physiology. In 1869, he accepted a professorship in Jena. He published a

number of new discoveries, and also, in 1877, a new theory of sleep. In 1881, he published the first edition of his famous work, "Die Seele des Kindes." He had previously published the "Physiologie des Embryo." Both are entirely new. In 1885 he explained mind reading. Prof. Preyer denies that the soul of a new-born infant is a blank, and holds that it bears upon it the stamp of many preceding generations. Indeed, he thinks inherited qualities quite as important as the child's own activity.

**DIARY OF THE BARONESS OF TAUBE, IN ESTHLAND,
DAUGHTER OF THE DISTINGUISHED COUNT OF
KEYSERLING.**

At the end of his work, Preyer refers once more to the importance of keeping diaries, beginning at the cradle, mentioning the works of H. Semming, I. B. Perez, also that of the biologist, Fred. Tiedeman, *Thierry Tiedeman et la science de l'enfant Mes deux chats*. He presents the following abstracts from the diary of the Baroness Taube:—

During the first five months I heard all the vowels when my boy was crying, the sound *a* being the first I most repeated; of the consonants, he pronounced *g* at the seventh week. If discontented, he said, *ge ge*. The syllables, *agow-agoe, äe, ou, ogö, i, a*, were repeated when he was in good humor, also the sound of *l* or *ül*. With my daughter it was *tay*, but up to the tenth month I

heard no other consonants than *g*, *b*, *w*, very seldom *l*, and finally *m*.

My boy sounded at the seventh month distinctly *r*, *grr*, *grrr* and *d*, connected with *dirr*, *dirrr*. They indicated discomfort, excitement, and sleepiness, which he continued into his fourth year. At the ninth month he supplements with *dada*, *baba*, *bäb ä*, also *agò* and *ò*. I recognize in this a kind of conscious attempt to speak, because he applies this sound in seeing something new, or the dog and cat which he observes very attentively, saying, *ö ö*. If some one is called, he says, very loud, *O* or *oe*. This indicates his first act of imitation, though since the eighth month he had begun to copy the faces and grimaces of the adults (since then strongly checked *in the adults*). He also understood words. When the dog is called by name, he turns his head towards him. At the tenth month the word *pap-ba* is repeated, without meaning. If he is asked to pat a cake, he claps his hands at once. In the eleventh month he says *dadadada*, when discontented. When he sees a person, he stretches out a hand and beckons. In the twelfth month he observes the lip movements of speaking persons very closely, puts his finger on his mouth, and tries to imitate.

When ten months old, teething began. When eleven months, he was for the first time carried outdoors. The sounds of *aga ga* and *gougag* are again used. He begins to creep, but in falling often he says in a very amusing way, *äch-äch-äch*.

At the age of eleven and one half months, a great progress is visible. He is much out-of-doors, and likes to see horses, hens, and ducks. Seeing hens, he says, *gog-gog*, and imitates crowing. He has lost the word "papa," and if demanded to say papa, he says *wau-wau*. In hearing people coughing, he does the same.

Od ädo äd is frequently used; also when he looks at pictures. After the first year, he was often entertained. Since then he develops rapidly. If *ge-ga-gack* is sung to him, he repeats *gack*. He begins to associate sounds with objects, mostly on account of the desire to perform sounds. He calls the ducks *gäk gäk*, imitates the rooster, calls the dog as learned from his nurse. I roll his carriage, and he says *boo*, and shows the direction where he wants to go. In seeing a horse, he says *prrr*, — also told by the nurse.*

The baroness says: I think it is a mistake to say that the child makes its own language. He learns to speak partly because he is told the words, and partly from his own imitations of sound; for example, of animals and misrepresentations of the language of adults.

Thirteen months old he calls all objects and pictures some days *dodo* or *toto*, and suddenly everything *niana*, a word signifying "nurse," which he hears often. "Papa" is not said, but "mamma," yet without any understanding.

[*The remarks "told" by the baroness show that she recognizes the difference between an original and an *imitated* expression, of which Preyer and myself speak repeatedly. — THE TRANSLATOR.]

The word "niana" becomes now the sound through which he expresses his desires of nourishment and anything else. At fourteen months he recognizes the pictures in his picture book, and refers to them in the previously mentioned sound. He recognized at once in a neighboring house the picture of horses, though hung up very high, by saying *prr*.

He now calls his nurse, to whom he is much attached, *niana*, and myself *mama*, but is not sure of the name. He exercises himself very much in performing sounds, especially in the morning early. He expresses refusal by the shaking of the head, which is original; he is not aware of nodding, learning it quite late.

The nurse speaks with me about "Caro," the dog, and the child says *woo, woo*, showing that he understood our talk. If the grandma says, "Give me your little hand," he does it. He tries very hard to pronounce rightly, the sound *gr* seeming very difficult.

At the end of the fourteenth month the amount of his words increases rapidly. He plays outside, and his sounds and words begin to be associated to ideas. At night he says, *appa*, that is, "Give me a drink." He says *ball, stone, flower, roast meat*, by leaving out a consonant.

At the end of the fourteenth month he calls me *mama*, and his father *papa*; his grandma, *grrra*.

At fifteen months, he says "good day," but not always adjusted to the time. He likes stories told to him, and wants to know about the pictures in his books.

To be lifted up in his chair, he calls *üppa*; to go down, *paty*.

He begins to lift himself up, and to hold himself on chairs.

He loves horses passionately, and calls them *koppa*, but likewise so my golden hair-pins. Berries he calls *mamee*. Insects, to which he pays a great attention and a keen eye, he calls *patika*, — their proper name is *esthland*. He calls big birds different from small birds, *papagoi*, or *gog*, or *gack*. His own picture in the mirror he calls *titta*, the name for child; but I do not know if he recognizes himself in it. Once he heard me call some one in the garden; he imitated me at once; and when asked, "How does mamma?" he understood this at once, and in pursing his mouth he tried to copy me. He does not like any change in his surroundings. If some one plays the piano, he sings with a pursed mouth but a harsh voice. He likes to dance, and keeps time.

He likes to play with apples, and calls them "balls." Yesterday he had for dinner apple sauce; he recognized the apple at once, and said, "Ball."

Sixteenth month. *Mama opaty*, which means "play piano"; he says this very often, sometimes in a commanding voice. If I do not consent at once, he imitates playing with his hands, and begs, *tatata tatata*. He likes singing, points out some special notes, and sings some himself.

Seventeenth month. He pronounces his name, and

when asked, "Where is Adolph?" he points to himself. Being called always in the third person, he does not know of pronouns.

In removing grapes he calls them at once *mammuts*, the name for "berries"; and when asked about their taste, he pressed his hand in comical ecstasy upon his heart, saying, *ach, ach*. At eighteen months old he understands and answers questions; for example, "Where are you going; to bed?" "Who gave you this; mamma or papa?" He pronounces every word, and if not quite right, and some one corrects him, he speaks it quite correctly. His sentences are composed of the noun and verb or adjective, very often using, like Preyer's child, *one* single word. If others speak of him, he repeats the last words. He uses the word "no," but not "yes." This he expresses in repeating the question; for example, "Do you want a piece of bread?" "Bread?" He gives names to his dolls, as grandma, grandpa, uncle, gardener, cook, etc.

At eighteen months he begins to draw, imagining to draw all sorts of animals, such as he has in his ark. In making a number of lines he called out, "Some storks, storks!" The book with birds is his greatest pleasure. I have not only to show them to him, but to imitate their voices and singing. He is highly amused by the little verses I sing to him; as, for example, "Zeislein, Zeislein, wo ist dein Häuslein." He remembers such verses. Also Russian words are pronounced. I observe

for the first time his efforts to tell others his experience. I had shown him the book of birds, and when returning to his nurse, he told her, "Mama, pictures, papager."

At nineteen months he walks independently since several weeks. He forms sentences, but without copula; for example, "Niana fetches roast meat"; "Caro outside, wau, wau"; "Pappa, pappa city" (Papa went to the city; "Mamma sits chair," etc.

Some words make him nervous; the refrain, for instance, of the "Song of the Goats." If I say, therefore, "Mark, mark, mark," he looks at me very discontented and runs off, sometimes pressing his hands over my lips, and crying for help and his nurse. Every play he leaves when I say, "Therefore, therefore." Songs amuse him very much, especially the imitation of the voices of the animals. He knows them all, and demands them, saying, kucka, donkey, kitty, puss, but wants to hear only the first lines, and then change. The other day he heard three lines from "The little Dog," and when I said "What now?" he said, "More little dog."

In playing with his dolls (from the ark) he sings to them.

Twenty months old. He begins now to use the word "yes" as an affirmative expression. Asking to whom belong these feet, he says, "They are mine." But besides this he uses no pronouns. Asked, after his grandpa's departure, where he was, he said very sadly,

"Lost." He imitates the actions of the adults. Putting a handkerchief around his head, he says, "Adolph stable go give oath." Saying good night, he went to the looking-glass, and kissing it repeatedly he said, "Good night, Adolph."

Twenty-fourth month. He knows many flowers, their names and colors. Pansies he calls the dark flowers. He catches the melody and the rhythm of songs; is very much interested in a German love-song, "Du Du liegst mir im Herzen," and sings it constantly to himself in walking.

Twenty-fifth month. Insects and beetles have the same interest. He catches one, carries it in the room, and says, "Now run," and is greatly astonished that it does not run.

Seeing something unpleasant, as a man with a hand organ and an ape, he covers his face, cries and says, "Ape ride away." Being absent, an aunt took my place, and was the first to address him with *you* and *one's self* with *I*. The consequence was that he addressed himself as *you* in the first and used *I* in the second person. He tells his uncle in the yard that there is an awful beautiful gentian. He makes the nurse repeat the Latin names of the flowers, and corrects her bad pronunciation.

Twenty-eighth month. He makes long sentences, and for fun puts another letter on the beginning of a word; he uses very big words; he even changes the songs, exaggerating the condition; as, for instance, "fly away,"

he says, "Fly into the clouds." "Has the moon wings?" he asked. I had been sick; recovering and kissing him, he said, "I am glad dear Jesus made you well again with sealing wax from the writing-desk" (he had seen his toys mended in that way). "Where is dear Jesus?" he asked. "In heaven? Can he fly?" It is very difficult to give him religious ideas. "Heaven is too cold," he says; "my nose would freeze." He asks the names for everything, and refuses to eat an apple before he knows the name. Sometimes he jokes in asking constantly questions; he uses the names of the days, but without any understanding.

The child does not know what is true and what not. I can never depend on what he says, except the account of that which he has eaten. Asking him if he saw his father on horseback, he says, "Yes, he went deep in the forest," while the father did not leave the house. Sometimes he denies what he saw or did. Asking if he said good night to his father, he said, "No," while he did it. I speak with the nurse in the park about some Finnish parrots. When the father asked the boy what he saw, he said, "Finnish parrots with golden crowns." "Truth," says the baroness, "has to be taught to the child. The less this is done, the easier it will be to instill religious conceptions, that is, the revelation of wonders. If not, one must be prepared to answer many questions, which is not quite easy."

In the twenty-ninth month, sad stories make him cry.

He remembers the names of animals easier than myself; makes logical conclusions; and the other day, when he asked for something useless, and I asked him if I should not also fetch the moon for him, he said, "No, that cannot be done, he is too high up in the clouds."

From thirty to thirty-three months old he names himself often "Adolph," and speaks then in the third person of himself. The right use of the pronouns is not understood. He often says, "Your mamma." He receives new books. The black and gray species are shown to him in the book of beetles. The latter plays now a great role in his plays. "Why is he called the sad one?" I asked him. "Because he has no children," he answered. Perhaps he heard this sentence somewhere. He remembers the names of the butterflies in the picture book better than I. This power of *memory* is less in his fourth year, his mental powers being more diverted in conception and ideas.

At thirty-seven months old he sings very correctly some melodies, accompanied with the piano, but if not practiced for a little while he loses the capacity. He speaks a great deal, and his language and sentences are well formed. Some mistakes he had learned from his nurse. He still cannot distinguish between the first and second person. The boy of six years hardly counts to six; numbers remain empty words. He does not remember the succession in the days of the week, nor the difference between to-day, to-morrow, and yesterday.

Preyer says: "In spite of the shortening of the foregoing diary, I thought it necessary, as it presents a valuable commentary on my Chapter XIX., proving how far logic and reason might be developed in the child of two years without the use of language. At the same time, it is interesting to see the difference between this child and my own." Mr. Preyer consents to the opinion that the child's moral food should consist in simple truth, instead of incomprehensible fairy tales and wonders. Nature offers the largest number of treasures to instill a religious moral conception, and refers, as I did, to such simple fables as written by Æsop, Gillert, Speckter, and others.



CONSCIOUS MOTHERHOOD.

OR THE EARLIEST UNFOLDING OF THE CHILD IN THE
CRADLE, NURSERY AND KINDERGARTEN.

By Emma Marwedel.

The following extracts give the opinions of distinguished critics and educators of a new work by one of America's most distinguished kindergartners. Miss Marwedel has for many years been a most devoted student of Froebel, and has well earned the preëminence which Miss Peabody assigns to her in a recent letter: "*It is evident to me that you are to put the capstone to the structure of which Froebel laid the foundation.*"

To those who have known of the author's work in San Francisco, or who have heard her expound the principles to which she has so earnestly devoted the best years of her life, it is not necessary to say more than that she has given to the public in this volume the results of her best thought and personal experience in the application of true educational principles to the early unfolding of the child's capacities.

No earnest teacher of young children, no mother, and no student of child-nature can afford to be without this valuable work. *It will be found indispensable to the true educator in any sphere*, and is especially commended to the attention of normal school teachers and students.

The book consists of 560 pp. small 8vo. Price, \$2.00 postpaid, to any address.

This is a book that is worth its weight in gold to every mother of children, and to every prospective mother who would know what motherhood involves, and who would properly discharge the duties of a mother. But the book is hardly less valuable to the primary teacher, and especially to the teacher in the kindergarten.

Miss Marwedel is one of the most intelligent, devoted and successful of kindergartners, as her work in San Francisco attests. She is one of the earnest and devoted lovers of her kind, whose greatest happiness is

found in doing good to others. There seems to be no sacrifice too great for her to make, and she works in that spirit of cheerfulness and moral earnestness that makes her own enthusiasm contagious. Her book is filled with her spirit. If every mother knew of, and could appreciate the contents of this book, the publishers could not supply the demand that would be made for it.—*Illinois School Journal*.

Miss Marwedel is well known in various parts of this country, as well as in England and Germany, as a wonderfully successful kindergartner. This book will be invaluable to mothers who will read it carefully and to kindergartners. It is divided into two parts. Part I. is called "The Earliest Unfolding of the Child in the Cradle, Nursery and Kindergarten." Part II. is called "The Soul of the Child," and is made up of extracts from the Book of Prof. W. Preyer, containing his psycho-physiological investigations on his own child. The latter part will be interesting for observant mothers to use in comparing the development of their own children with that of this German baby. But it is the first part especially that appeals to the common sense and aspirations of those who have the best and highest interests of children at heart. Miss Marwedel speaks from wide experience and thorough education. The chapter on "The Ideal Nursery" is alone worth the price of the book in the way of suggestion.—*Christian Register, Boston*.

Froebel and others think that instruction should begin with the young child. Miss Marwedel urges that it must begin with the new-born infant. Preyer finds that the infant enters the world with embryonic ideas already formed, and many tendencies so well established as to be independent of the senses. Among the subjects considered are the development of conscious motherhood into its ideal "Sacred Motherhood," the union of both sexes in ideal parenthood, the child's right to an early educational unfolding beginning at the cradle, its development through the senses, its emotions aroused by its earliest conceptions of comfort and discomfort leading to power of will and personal activity, and this again developing the reasoning faculty in advance of speech, the gradual steps in learning to speak and how to use speech, the development of selfhood and the ideal nursery. The book will interest teachers, and deserves the special attention of physiologists, psychologists and parents.—H. B. BLACKWELL, *in Woman's Journal, Boston*.

Miss Marwedel has for some years occupied a very prominent place among the disciples of Froebel in this country. Her purpose in the present work is especially to awaken the interest of mothers in the educational importance of the very first months of life to the unfolding of the human being. The facts which she accumulates as to the effects of prenatal conditions as well as those of the first months of conscious life are deeply significant.

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Her book is mainly occupied with discussing how this development, related as it is to the emotions, the intellect and the will — the whole mind — may be best promoted. The methods of using the different devices of the kindergarten are described, and especially the author's circular system of drawing, sewing and paper-cutting, and the playing of botany in the nursery.

The second part of the book is of still greater interest. This is the best presentation of Prof. Preyer's work. It aims to be strictly inductive — consists indeed of a record of observations on the development of his own children, carried on systematically from the day of birth. These observations and the inferences founded on them are of the deepest significance as related to the problems of philosophy and education.—*Wisconsin Journal of Education*.

“What will be the practical effect of the book?” “How does it stand as a means of propagating sound doctrines not yet universally understood?” We have the task of finding many commendable doctrines emphatically expressed. The keynote of the volume, as indicated in its title, is to arouse mothers to a proper appreciation of their privileges and duties. Education begins in the cradle: the child is not one being in its infancy and another when it comes under school influence. There is a continuous psychological development paralleled by a physical development, taking place independently of the technical ‘instruction’ and based upon natural laws. These laws are to be explicitly unfolded, and are to form the guiding spirit under which the child is to be viewed and its true education directed; to reveal the all-important truth of the supreme value of these early years of life when habits far deeper than the artificial learning of later years are laid down, when the most difficult actions of life are learned, when the child is passing with lightning speed through the history of the race, epitomizing the characteristics of remote ancestors as well as of its parents. The duty of this sphere of education falls upon mothers: it is to be rescued from the hap-hazard spirit in which it is cultivated, to be made a serious occupation and not a dilettanti toy, to be recognized as the true mission of ‘conscious motherhood.’ The advancement of woman is to consist in the increase in dignity and importance of the duties which have in all ages fallen to her share. The appeal is a noble one; and while not always made with a full view of the many-sidedness of the problem involved, is presented in a way likely to attract the audience to which it specially addresses itself.

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The second part is devoted to a *résumé* of the work of Preyer on child-mind. The work of selecting the abstracts and putting them into good English is fairly well done.

The object of the translation is to arouse an interest in the observa-

tion of children, and in this good cause the book is a desirable aid.—*Science, New York.*

In "Conscious Motherhood, or the Earliest Unfolding of the Child in the Cradle, Nursery and Kindergarten," the author, Emma Marwedel, has struck with a strong touch the very key-note of all education. "Education," she says, "must begin with the child in its cradle, with the new-born infant and *its parent.*" Were the parents instructed, the road would be open for childhood to happiness and usefulness. It is because the mothers are ignorant or shallow too often, and the fathers absolute fools, that the babies develop into unlovely or vicious maturity. Miss Marwedel is perhaps the most distinguished living authority on the Kindergarten, and in her book she devotes much space to an account of Professor Preyer's investigations as to the development of the soul in babies. The real value of this work lies in the light it throws upon the too-often unknown and mysterious shadowland of infancy. The author believes that little children have inviolate rights, and that these rights cannot be disregarded with impunity. "We should cultivate a child," says the author, "as we cultivate a rose, by supplying the very best conditions of growth, and then respecting its individuality in the use of these conditions." How many of us give as much thought to the development of the children God has given us, as the florist gives to the culture of a Jacqueminot or Maréchal Neill? Miss Marwedel gives many practical rules for the education of the child at the infant stage. It were well indeed for the future generation if her book were thoughtfully read by all parents.

This excellent book is issued in attractive form.—*Chicago Evening Journal.*

CONSCIOUS MOTHERHOOD ; or, The Earliest Unfolding of the Child in the Cradle, Nursery and Kindergarten. By Emma Marwedel, supplemented by extracts from Prof. W. Preyer's psycho-physiological investigations on his own child, called "The Soul of the Child." The author of this volume has been engaged in kindergarten work for a number of years. Her inspiration in writing the book was sympathy with the mother in her immeasurable responsibility; the condition of childhood's rights to justice and happiness; and finally, an abiding faith in the mental and physical evolution of the race. Having found the cradle to be the right spot wherein to begin education, a knowledge of the nature of the inhabitant of the cradle was found to be necessary to that beginning. The work is the most profound and most practical on kindergarten and mothers' earliest work with children, yet published.—*Minneapolis Tribune.*

Extracts from Letters received by Miss Marwedel, with
permission to publish.

I feel assured that in the hands of the intelligent, conscientious mothers, it will do much good. The language is forcible and terse, the points are well selected and wisely taken, its precepts are sound. I congratulate Miss Marwedel on this beautiful and useful volume.

W. N. HAILMANN,

Supt. LaPorte, Ind., Public Schools.

We are struck with both the importance and the novelty of this treatise, into the elaboration of which Miss Marwedel brings not only her large personal experience and untiring zeal, but also a collation of historical and statistical data, and professional reports and opinions, which thus connected assume an exceptional interest, and when published in proper form could not fail to exert a very beneficial influence upon the minds not only of teachers, but especially of parents, in respect to the management of children at the most important formative period of their lives.

JOSEPH LECONTE,

E. W. HILGARD,

Professors in the University of California, Berkeley, Cal.

I am pleased with Miss Marwedel's development of elementary drawing for kindergarten and primary work. It is philosophically correct, and delightfully practical. Altogether, her modified plan of work seems to me to be a real and solid advance and improvement. The abstract of the work on Motherhood indicates a manual of great value.

JOHN SWETT,

Prin. Girl's High and Normal School, San Francisco.

The work abounds in original and fruitful ideas, and marks the commencement of a complete revolution in the instruction of children.

F. V. PAGET, *San Francisco.*

It gives us great pleasure to offer our hearty endorsement of the admirable work of Miss Emma Marwedel in her "Conscious Motherhood; in the Cradle, the Nursery and the Kindergarten," and to urge it upon the attention especially of all thoughtful women, parents and teachers. Not the least of its merits being, in our view, the continuing in this of the most popular portions of her translation of "The Soul of the Child," by Preyer, whose wise words emphasize points too long neglected in the discussion of the broad question of human development. Money and time, we feel, can hardly be more fruitfully spent than in making one's own the ideas of these eloquent, inspiring and pregnant pages.

CAROLINE M. SEVERANCE,

JEANNE C. CARR.

Los Angeles, Cal.

[*Extract from Prof. Preyer's Letter.*]

DEAR MISS MARWEDEL:

I am very glad that the investigations I made for years on nurselings and my own child, and the results thereby gained, should be used as a foundation for an early education. Froebel's proceedings in that direction are too abstract, in my opinion. According to my judgment, great care is needed against educating, instructing, and ruling too much, as well as against doing too little. The unfoldment (*das Werden lassen*) is the most necessary. In the first place (leaving aside the worst examples), the development of the senses, the will, and the reason, should be equally carried on in all directions.

I am anxious to see your book. According to your index you do justice to these principles, by not following blindly the common kindergartens, though claiming to be founded on Froebel's method.

Respectfully yours,

Fena, Germany.

W. PREYER.

Miss Marwedel's book is the work of a genius; and I regard it as one of the most valuable contributions ever made to educational literature.

MARY W. KINCAID,

Teacher of Normal Class, Girls' High School, San Francisco.

DEAR MISS MARWEDEL:

The chapters of your book which I have seen in manuscript have interested me very much, and I shall look for their publication with much pleasure.

Yours very truly,

BOSTON.

ELIZABETH LOMBARD.

. . . I sympathize with you heartily in the importance you attach to the mother element in child culture; properly educated herself, the mother's nursery and home would be the true kindergarten for the infant and young child; but as mothers and homes are, we must look to well-trained kindergartners to perform that function properly. . . .

Yours truly,

HENRY BARNARD.

I am very glad to tell you how valuable your book for mothers seems to me, and your plan of work for the little children meets a real need in our work. I am eager to try it in Mrs. Shaw's nurseries and kindergartens.

Very truly yours,

BOSTON.

LALIAH B. PINGREE.

No woman in the country is more competent to write on earliest education and the kindergarten than Miss Marwedel. I have examined her book, and believe its publication will be serviceable in promoting a better knowledge of Froebel's philosophy and methods.

JAS. MACALISTER,

Supt. Public Schools, Philadelphia.

I take this opportunity to say that I count it a special providence that at this moment Miss Marwedel's "Conscious Motherhood" is published, as it completely supplements my life-work, with an illustrated, practical application of Froebel's true theory of the education of the child, establishing the fact that kindergarten development must begin in the home, and that the prime kindergartner is them other, whose supreme happiness and perfection consist, in conjunction with her husband, in working intelligently for the education of the human race.

It was Miss Marwedel who, in 1867, first introduced me into Froebel's genuine Kindergarten, in the city of Hamburg, and inspired me with the courage to make it the main object of the remainder of my life to extend the kindergarten over my own country, where only, as Froebel declared himself, it could have its full scope, as ours is the only nationality that has as yet recognized individual freedom to will as the characteristic first principle of humanity. It is only the self-knowing and self-governing that can create a government of the people, by the people, for the people; and the self-government of the child must flow from the mutual understanding of the child and its mother. To this end, Miss Marwedel's book guides the mother and her assistants in the kindergarten and in the school.

I therefore make it my last word to refer my readers to Miss Marwedel's first book for mothers. It is in itself a key to the whole of Froebel's philosophy, whose depths she seems to me to have sounded more thoroughly than any of his disciples. E. P. PEABODY, *Boston.*

I have read with some attention the synopsis of the contents of "Conscious Motherhood," and a work of this kind, which will present these subjects in a correct and clear way, should be welcomed by every parent and teacher.

F. LOUIS SOLDAN,
Principal Normal School, St. Louis, Mo.

RESOLUTION PASSED BY THE KINDERGARTEN DEPARTMENT OF THE
NATIONAL EDUCATIONAL ASSOCIATION.

Resolved, That we also send warmest greetings to our pioneer California co-worker and friend, Miss Emma Marwedel, whose genius, self-sacrifice and devotion have wrought out such valuable educational achievements for the kindergarten cause. Her recent excellent and practical work on "Conscious Motherhood," so full of wise thought and suggestion, we recommend to every household, and we await with eager expectancy the publication of her unique and valuable Circular System of Drawing, which is bound to mark an epoch in kindergarten education.

THE CHILDREN — HOW TO TRAIN THEM.—Are you interested in the better training of the Children: then read "*Conscious Motherhood*," a

book that every mother should own and read. It will repay her a hundred fold in the ease and comfort with which she will be able to perform her duties.

Are you interested in a woman: then see that she has this book.

Are you interested in the *Home*: give it a place upon its library shelves.

Are you interested in the *State*: make its mothers and fathers more intelligent concerning the training of the children.

Would you save the rising generations from the almshouse, the prison, the insane asylum? *train the child.*

Read "*Conscious Motherhood*," by Miss Emma Marwedel, America's most eminent kindergartner.

It contains a record of the author's own experiences and observations; also a summary of the great work of Wilhelm Preyer, on "The Soul of the Child."

MRS. E. G. GREENE,

*Supt. National Kindergarten Dept. of the Women's Christian
Temperance Union.*

Equally emphatic endorsement has been received by Miss Marwedel from many others, whose names alone it will be sufficient to mention. Among them are: Prof. Howard Sanderson, Terre Haute, Ind.; Alice W. Putnam, Chicago; Betty Harrison, Chicago; George P. Brown, Bloomington, Ill. Frances E. Willard, Chicago, Caroline P. Buell, Chicago, Mary A. Woodbridge, Chicago, respectively President, Cor. Secretary and Rec. Secretary of the National W. C. T. U.; Esther Pugh, Chicago; D. C. Tillotson, Topeka, Kansas; Susan E. Blow, St. Louis; Sarah A. Stewart, Philadelphia; Prof. G. Stanley Hall, Worcester, Mass.; John Eaton, LL.D., Marietta, Ohio; A. B. Stockham, M.D., Chicago; Clara B. Colby, Nebraska; Prof. Charles Wilkinson, President of the Institution for the Deaf, Dumb and Blind, Berkeley, California.

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GAMES AND STUDIES

IN THE

LIFE, FORMS AND COLORS OF NATURE

FOR HOME AND SCHOOL.

By EMMA MARWEDEL.

It is now admitted by the best educators, that that development of child life is best which comes as the result of spontaneous, joyous contact with nature through the self-activities of the child. The normal child thoroughly enjoys, and works hard in observing and testing the objects about him, the pleasure consisting in the appreciation incident to the acquisition of the experience. Labor is the means of all true culture. The free self-activities of the child are the media through which the teacher must work.

As in the earliest years of child life his self-activities are directed solely toward observation of natural forces and qualities; so, when the period of so-called education begins, the same methods should be pursued, partly because they are the natural methods, and partly because they are pleasurable and familiar methods to the child.

It is a labor in which he delights. This labor should be constantly a study of nature; hence, that work is best which clings closest to nature. This was primarily Froebel's ideal, but in the later development of the Kindergarten science (and everything in this nineteenth century is tabooed which cannot be reduced to the syllogism or scientific analysis), this phase of Froebel's work has been much neglected. We must, therefore, return to nature through nature.

Now the two departments of nature most attractive as well as accessible to the child are plant life and animal life, and the two most prominent features of these are *form* and *color*. Hence, the study of form and color is the open door to all further study of life and, thence, of ethics.

It is the aim of Mme. Marwedel's adaptation of the Froebel games to begin the educative process with the earliest days (not years) of child life, and to follow the natural method in developing the perceptive powers by a well devised scheme of plays, introducing at once, by means of systematically arranged games, conceptions of *color, form* and *rhythmical motion*.

This system is the result of many years of practical experience in Kindergartens and schools.

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b. *Color Charts* : (1) Four charts, 18 x 20 inches, showing on a black background the three primary colors in circles $7\frac{1}{2}$ inches in diameter, and the same blended into secondary colors; also these secondary colors separately and their composition into the tertiary colors. (2) Four charts illustrating shades, blendings, analysis and synthesis of color. These last are the finest piece of lithographic work ever produced.

SERIES V. *Studies in Botany* : These are not yet issued, but will supplement all the preceding by very elementary and practical talks on botany in book form, and are to be accompanied by more than one hundred colored pictures, true to the size and color of the plant forms. These, as before, are to be studied and colored from the object.

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SERIES I. Each is a neat box with lithographed cover, accompanied by printed descriptions of the games, and several plates of suggestive exercises.

1. Worsted Balls, 6 in one box, 75 cents; per 100, in 6 colors, \$2.00.
2. 100 Ellipsoids, in box complete, \$1.00; per 500, \$1.75; per 1,000, \$3.00.
3. 100 Rings, etc., in box complete, 75 cents; per 500, \$1.25; per 1,000, \$2.25.

SERIES II. 34 *Sewing Cards*, in box complete, 40 cents; per 500, \$1.85.

SERIES IV. a. *Four Form Charts* : Sphere, 20 cents; Cube, 20 cents, Cylinder, 20 cents; Sphere divided, 25 cents; the four charts, 75 cents. Mounted on heavy boards, neatly bound, to hang on the wall, \$1.15.

- b. *Color Charts* : (1) Four primary and secondary colors, \$1.00: each, 30 cents. (2) Four analysis, etc., \$2.25; each, 60 cents. Color Charts, mounted, \$3.85.  
All the charts above, \$3.60; or mounted, \$5.00.

A few copies of Mme. Marwedel's "Poetry and Studies in the Life, Forms, and Colors of Nature," descriptive of the aims and methods of the Series, are in stock, and will be sent, postpaid, on receipt of 25 cents.

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