KATE FIELD'S WASHINGTON

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One of the novel sensations I often felt was the wave of unselfishness that swept over me as I came in contact with others in this strange, meteor-like acquaintanceship. I often recall a dear little Scotch dame who sat at table with me one morning over a cup of coffee in Costa Rica's building. She was from Nova Scotia, and had come alone to spend two or three months at the Exposition. Her hair was gray, and a few wrinkles had crept into her brow and cheek, but time could not dim the fire of immortal youth that shone in her bright face.

"I hardly feel that I can take time to breathe," she said, as she jotted down some facts she had just gathered about Costa Rica's coffee and dyestuffs. "I am the only one in our neighborhood who could come and I must take it all home with me to my people. I cannot take half enough, not half enough."

And as she talked, you could see it was for others she was looking, for others she was storing up all the new knowledge she was gaining; the very joy of her life was that she might carry back to her friends and neighbors the fund she was gathering here. I felt the tears very near the surface as I listened to her.

The variety of our visitors was endless. One could scarcely recall them in a lifetime.

The Indians asked the fewest questions, but nothing escaped their black eyes, and everywhere they made a picturesque effect that even an Arab or Japanese in native costume could not excel.

One day when wandering in the Art Palace, I dropped down on a bench among a group of marbles, and, looking up, met a pair of blue eyes smiling back upon me from a kindly German face.

"One must rest," I said with a laugh, "or one would go blind."

"Oh, it is so *puzzlesome*," he replied; "my head swims and I just know nothing!"

At the dedication in October my companion was an exquisite little Swedish lady. She knew all the foreign legations by their dress, and made everything quite plain to me. She was exceedingly pretty, her conversation was charming, and in all she said and did there was a touch of pathos which was an added grace.

I shall never forget her feeling when she discovered the representative of her own country among the Ministers. She rose to her feet, looked at him eagerly through her glass, dropped it into my lap and put her arm around me, exclaiming: "Look at him! Look at him! See how dignified he is! Isn't his dress beautiful and unassuming? See what a fine head he has! Oh, my country, my country!"

And her beautiful eyes were swimming. For a time she knew nothing of the dedication. She never seemed to doubt but that I understood as if I had crossed the seas with her in imagination and gone back to her far-off Sweden. She let her tears fall unheeded and dry upon her cheeks. Her eyes shone like stars.

Love of our own teaches us to feel for others, until there is a blessed unison between us, and we no longer feel "My Country," but "Our World." For all the earth are kin.

JULIA DANIELS MOSELEY.

IN ROCKY HILL, near Princeton, New Jersey, stands the old Berrian house, famous as the place where Washington wrote his Farewell Address. Local tradition represents Washington as having written his notes for the address on the east wall of the room, where they were visible until covered by paper. The old house is in excellent preservation and the Society of the Cincinnati is to erect a tablet there.

PEOPLE AND THINGS.

AMONG recent guests at the Shoreham have been that prince of story-tellers, Captain John C. Wyman of Rhode Island, Mr. and Mrs. A. A. Shuman of Boston and Hon. and Mrs. Thomas Fitch of Phœnix, Arizona. No Boston merchant is more respected than Mr. Shuman, the friend of lamented John Boyle O'Reilly and of many a struggling genius.

"Tom" Fitch, the silver-tongued orator of Nevada, who looks like Henry Ward Beecher's double, came to Washington to see what chance of Statehood Arizona had with this dying Congress. As the persuasive pleader has returned to Phœnix, it is safe to conclude that he saw no light ahead. Arizona will keep.

There is every evidence that Arizona was populated by a prehistoric race. Remains of great aqueducts attest their knowledge of irrigation and prove that what has been done can be done again.

At the recent annual meeting in Chicago of the Associated Press that furnishes to seventy millions of people the news of the world, Victor Lawson of Chicago was reëlected President. The other officers are Horace White of New York and A. H. Belo, first and second Vice Presidents; Melville E. Stone, Secretary; Charles S. Diehl, Assistant Secretary; and George Schneider, Treasurer. Such officers cannot fail to produce good results. Two of the most devoted and unselfish friends the Associated Press has ever had are Melville E. Stone and H. H. Kohlsaat.

Mr. and Mrs. George Alfred Townsend have been residents of Washington for the last year. Their summer home is perched on South Mountain, about eight miles from Mrs. Dahlgren's country seat. Who does not know "Gath's" writings, has never read American newspapers. Few men are as universally informed as this veteran correspondent. His memory and his ability to make a "story" out of anything are Gathian. He is a unique figure in journalism.

Rev. Dr. and Mrs. Henry M. Field are passing the winter in Washington to enjoy the near companionship of Justice Field, whom age cannot wither nor custom stale.

One of the coming great men of this Republic is Dr. Elmer Gates. He is temporarily domiciled in Philadelphia in order to be near a most convenient laboratory. When experts like Commissioner of Education W. T. Harris, Major J. W. Powell, Professor W J McGee and Frank Hamilton Cushing unite in placing Elmer Gates, aged thirty-five, among the most advanced thinkers, it is a sign for the rest of us to note. Dr. Gates is a singular product of this country, for the reason that, though his ancestors have lived in Ohio for four generations, they are German on both sides. Thus this remarkable young philosopher and inventor is a German-American in a new and very interesting sense. His experiments in mentation lead him to the conclusion that the mind can be built up and made over quite as effectually as the body, and his aim is to establish in Washington an institute for that purpose. Unfortunately for science Dr. Gates, like most students, is not blessed with a fortune to carry out his benevolent scheme. If there be any millionaire who has a few thousand dollars to spare, let him consult Prof. William T. Harris as to the advisability of coöperating with one of the most modest and most unselfish of scientists.

The Secretary of War and Mrs. Lamont were overwhelmed with friends on the occasion of their last reception. Their hands were shaken by hundreds, who afterward made their way by slow stages to our new Lieuten-

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DR. ELMER GATES ON THE MIND-ART.

BRAIN BUILDING AND THE CURING OF IMMORAL DISPOSITIONS.

I.

"DR. ELMER GATES, what is this mind-art which you have discovered, and about which we have lately heard so much?"

"The mind-art comprises a series of arts based upon the sciences of mind. To the science of mind there is a corresponding art of mentation—using the word mentation as inclusive of the totality of the conscious and sub-conscious mental functions of an organism. The most important art of the mind-art is perhaps the art of brain-building, whereby an animal or child can be given more and better brains, and caused to embody more mind than it would otherwise have possessed. The mind-art is the art of getting more mind and of properly and efficiently using that mind after you have it. It gives the child more brains and mind with which to get its education—gives it a better mind to 'start out' with!

"The mind-art comprises also the art of education, as based upon the demonstrated laws of brain-building and mentation. It demands of our educational system many important and radical reädjustments and changes in the kind and order of its subject-matter, and in its methods of instruction it makes education far more comprehensive, and at the same time far more practical: it teaches people how to do those things which they are most engaged in doing. It teaches them how to acquire knowledge and skill according to normal physiological and psychological principles—the majority of which principles are violated by present methods of teaching—and in short, teaches them how to use their minds as a whole.

"The mind-art includes also the art of curing immoralities and criminal propensities, as part of the more comprehensive art of moral training and character-building.

"The mind-art also includes other arts, such as the art of promoting and regulating originative mentation—the art of thinking systematically, so as not to impede our efforts by violations of natural laws of mentation, and so as to promote desirable results by conforming to organic and cosmic laws which affect our mental functioning; in short, the fundamental art of the mind-art is that of brain-building, or mind-embodiment."

"It is certainly a most important thing for all of us to get more mind."

"Yes. But to thoroughly appreciate its importance it is sufficient to remember that the mind underlies all of the sciences and arts and institutions, and has created them. The mind has produced all of our paintings, poems, literatures, languages, architectures, governments and religions. Whatever man has done has been the work of his mind. Your mind, my dear WASHINGTON, is the most momentous and important fact in the universe—for without your mind what would the universe and its possibilities be to you? Take from you your mind, and what would there be left? It is the mind that suffers and that enjoys, that loves and hates, that knows and judges and guides your conduct—what else have you to guide your conduct? To your own mind you must look for your guidance in all you undertake; and if you can get more mind, or a better regulated mind, you will by so doing fundamentally and directly promote everything you undertake—you will be better able to learn the sciences and use the arts and live in this world. To give to people more mind is to promote directly every reform and every kind of progress at once. If evolution has any one goal more important than another, it is the attainment of more mind in the individual and the race. If evolution did not lead to more mind it would be retrogression and not progression. That adaptation to environment which does not lead to more mind is devolution and not advancement. The real progress made by any people is not their architectures and religions and institutions, but the degree of mental development they have attained. To see how true this is, just try to imagine a progress in civilization which at each step produces less and less mind in the people!

"Now, if it is possible and practically available to build better brains and to create better and more taxic minds; if it is possible to systematize according to a rational and scientifically-established art the growing of brains—which has hitherto been left to the haphazard of circumstances—then it will be admitted that brain-building is the most important art of the mind-art, in fact, the most important of all the arts of civilization. If the mind produces all of the arts, then the art of mentation must be the art of arts."

"Are you aware that, if you can really give to persons more mind by brain-building—if it is really true that the human race has at length acquired an art capable of giving to the individual a greater and more normal mental capacity, we have then attained a new epoch in civilization?"

"I am fully aware of the promise of this discovery, and believe it to constitute a new method of progress and civilization."

"You say that your own experimental researches furnished the data upon which the mind-art was founded? What were they?"

"Whilst my own researches in the science and art of mentation have furnished the direct demonstrations and insights which made it possible for me to discover the mind-art, I wish it to be well understood that to a far larger extent the mind-art is the outcome of a synthesis which I have achieved of the discoveries of those who have preceded me and who have been contemporaneous with me; and the mind-art will fulfill its mission only to the extent that it successfully assimilates the total scientific achievements of the race, and only to the extent that its application and public introduction is brought about by the coöperation of educators and investigators in every scientific field.

"My own researches extend over a period of twenty years, during which time I have made many thousands of experiments in the mind-art and in the sciences of mind upon which the mind-art is based. By the sciences of mind—according to my own classifications—I mean the following: Biological psychology, or the study of mind by artificially varying the structures of organisms and their environments; subjective biopsychology, or the study of introspective states by artificially varying the structures of organisms and their environments, and sociological psychology, or the study of mind by artificially varying the structures of groups of organisms and their environments. These three sciences I call the biopsychological sciences. Organic and cosmic structures and conditions are artificially—or naturally—varied to determine the corresponding variations in mentation. Structures are experimentally varied to determine function.

"Then, there are three psychobiological sciences: Psychological biology, or the artificial variation of mental functions in organisms to determine the correspond-

ing variations of structures, organic and cosmic; subjective psychobiology, or the artificial variations of mental states to determine the corresponding changes in structures, organic and cosmic; psychological sociology, or the artificial variation of mental states, opinions, etc., to determine the corresponding changes in social groups. In these psychobiological sciences we vary function artificially—or naturally—to determine structure. In each of these six domains I have made original researches, and have established in each a new general method of research, and sometimes new technic. A synthesis of the generalizations of these six sciences of the mind constitutes psychology.

"Corresponding to this science of mind is an art of mind, but I cannot allude to my experiments in each of these domains. I will restrict my answer to your last question to an account of one single line of my experiments in *one* of the above-mentioned sciences, namely, to some experiments illustrative of the new general method of research in psychological biology. I discovered this new method of research at the very beginning of my studies, and it constitutes one of the experimentally established foundation stones of the art of brain-building. While experimenting upon myself in the then empirical art of promoting originative mentation I was confronted by problems that could be solved only by a more accurate knowledge of the functional connection between the brain and the mind than the world then possessed. I was dissatisfied with the method of those investigators who cut away, washed away, or electrically stimulated portions of the exposed brains of living animals, not merely because I shrank with horror from the cruelties of vivisection, but because any given area of the brain's surface is so interconnected—by fibres, filaments, vessels, etc.—with other areas, that the extirpation of one part pathologically affects various other parts, and reliable conclusions cannot be obtained. I fortunately discovered a new general method of psychological research which was surprisingly fruitful in results, and which promises still greater results. This new method consists in giving to a number of animals of a given species an unusual and extraordinary training in the use of some one definite mental faculty, such as seeing colors, hearing, etc., and of depriving another group of animals of the same species of the opportunity to use that faculty, and then chloroforming them when they have arrived at the same age and comparing their brains chemically, microscopically, and otherwise, to determine the differences of structure produced by the disuse and use of the same mental functioning.

"In one series of experiments seven puppies were from the moment of birth confined in a carefully darkened room, and were not permitted to see a ray of light, and consequently when at the age of nine months they were chloroformed they had never used the seeing function. A second group of six puppies of the same species and age were allowed to lead a natural dog's life, without either deprivation or special training of the seeing function. A third group of three puppies of the same age and species were given an extraordinary and unusual training in the use of the seeing functions of the brain. At the age of nine months these dogs were chloroformed, and thus killed, and their brains examined at leisure; but before giving the results it may be interesting to describe my method of training the dogs. I had many methods—I will describe two:

"A long hall leading into my laboratory was 'carpeted' with squares of colored metal, so arranged that, when all of these squares were connected with an induction coil, *except* those of a certain color, it was possible for a dog to pass through without getting a shock by jumping from square to square of that particular color. By varying the color which was free from danger of shock, the dogs were taught to discriminate between different colors and even between different shades of the same color. They were compelled to thus use their seeing functions in discriminating colors many times daily, month after month.

"Another method was to feed the dogs from inverted colored pans, placing bits of meat under pans of a given color, and smearing all of the pans with meat so as to prevent the dogs from detecting by the sense of smell the pans with meat under them. As soon as they became accustomed to finding meat under a given color, a change was made to some other color.

"The result of the examination of the brains of these three groups of dogs was as follows: The first group, which had been deprived of light, exhibited an undeveloped cortex in the occipital seeing area, while the second group had a more highly developed cortex in this region, and the third group had a very much more highly developed cortex in this same region. The density or specific gravity of the gray matter—not of the intermixed vascular tissue—of the cortex of this region of the first group was low—1.011; it was higher in the second group—1.018; and highest in the third—1.027. The vasculation was least in the first, greater in the second, and greatest in the third. In the first group—the one deprived of light—the neuroblasts in the cortex were undeveloped, and I could not find any well developed ganglion-cells with collateral filaments and plumose panicles; while in the second group—those which had led a usual dog-life—there were an average of eighty-nine well developed cells in each square millimetre of the cortex, and the axis-cylinders and collateral filaments and plumose panicles were distinctly developed. In the third group—the educated dogs—there were from 104 upward of well developed cells in each square millimetre of the cortex; the cells were far more highly developed than in the second group, and had more panicles and filaments; and the cells themselves were much more complex in their internal structures and chemical compositions, and so on with other characteristics. In every particular the educated dogs had a much larger number of brain-cells in the seeing areas, and the cells themselves contained a greater number of structures: that is, I gave to those three dogs more brain-structures in those parts of their brains—I gave them more mind than they otherwise would have had.

"I further verified this method and these results by experimenting in the same way with the other senses. I also studied the effects upon the brains of rabbits when they were compelled to live in rooms of one-colored light. Rabbits living from birth in a room of all red light have a cortex over the seeing areas of the brain containing a different chemical substance than when living in a green room, as proved by the different staining of the cortex with the same reagent. I also trained dogs in the use of the right leg more than the left, and in various ways studied the effects which definite mental functions have upon the brain-structures.

"My experiments demonstrated that every definite mental experience produces a definite anatomical or molecular structure in some particular and definite part of the brain. Function creates structure, and physiological structures are essential to the manifestation of mind."

"This opens a tremendous vista before my thoughts. I must take time to study it."

"Take till next week, then; for I have a little more to say which will bear waiting. *Au revoir*."