

A Short and Rambling Chapter from the Life of Dr. Edward H. Angle*

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In reviewing such knowledge as I have gathered through the years of Dr. Angle's childhood, youth and early manhood, and trying to fit these periods into that of his later life, I have been convinced that he was born to be an orthodontist; that he was destined at birth—or before, for aught I know by whatever force it is that shapes destinies, to the task that seems certainly to have been set for him. I could almost say I believe he was born an orthodontist, as poets are born, and artists and musicians and teachers. Born poets write rhymes in their early years; born artists eternally draw and color; born musicians compose symphonies. This boy "tinkered." That, at least, was his family's name for his activities.

None of these "born" people, I suppose, dream dreams of future greatness as they rhyme and draw and compose in their tender years. They do the things they do in the greatest simplicity of purpose, and only because the urge to do them is beyond their control. If their parents and others criticize and punish them for wasting time and not doing ordinary tasks in stereotyped ways, they shrink into themselves, for they are timid, sensitive little souls, and suffer because they cannot understand. But, if they are really born to their several arts, they continue, notwithstanding, to poetize, to draw and color, to create musical harmonies, to "tinker," for that is the way their destinies point; that is the way their loves lie, and great love—the strongest thing in the world—cannot be diverted.

Because, in the middle of the nineteenth century, orthodontia, unlike music and painting and poetry was what we may call articulate only through empiric mechanical contriving, a boy could be born into it and proceed on a long apprenticeship without knowing at all what he was really about, and that is what happened in this case.

The day that the boy who was to become Dr. Angle was old enough to hold a tool in his hand his preparation for his predestined work began. And from that day "tinkering" was his meat and drink: not just mere whittling or driving nails, but actually making things. In the beginning he had no place to work and little to work with. He whittled with his mother's "case-knives"—and lost them—leaving his whittlings all over the kitchen

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floor and getting many scoldings for it; and he drove nails with his father's hammer, and sawed with his saw, and got whippings for sawing on nails and for leaving the tools wherever he last used them.

His right knee, which he said he used "as a bench," was covered with scars where the knife, and later, the drawing knife had slipped and left their permanent marks. He used amusingly to recount what the various scars "stood for"; this when he was making the holes in the tugs for "old Tige's" harness and the knife suddenly went through the leather and on into the knee; that where the drawing knife "took off a slice" when he was making the tongue for his wagon, etc., etc., etc. His hands, too, bore many more scars than those of the average boy—painful witnesses to the extensive use of tools while the hands were still too small to be skillful.

Of course there was bound to continue to be accidents that left scars as long as sharp tools were used, yet they seemed to be remembered only as incidents to the work being done at the time,—always the important thing. Indeed, there was an occasional injury which he looked upon as a real Providence,—that of the cherry-tree adventure, for example.

School didn't mean much to him except as a release from the farm work which he loathed, not, I think because it was hard, but because it interfered so grievously with the significant things of life; with tinkering, his real job. But, of course, at school there were recesses for play and adventure, both of which he dearly loved. In winter there were snow forts to build and bloody battles to be fought, and in summer there were the woods in which to scout for "wild" Indians; also in which to find "slippery elm" and sassafras bark, and to just lie in the shade and watch the cloud pictures in the sky. Much later in life, remembering his own school days, he used often to greet his school-boy patients with, "Well, Bill, how was school today? Any fights?" And on hearing there had been none, he would remark, "Oh, you boys have no spirit. When I was a boy and went to school it was a poor day when there weren't at least three fights."

Just across the road from the school ground where he attended school a neighbor had set out some fruit trees. They had made a good start and were perhaps two or three inches in diameter. Wouldn't it be a great feat to cut down one of the cherry trees and so attain fame, like George Washington! A trusted pal was let into the scheme. He voted it good. The next day they smuggled a hatchet to school and by skillful manouvering, both managed to get excused from the room at the same time during the afternoon session.

The cherry-tree was out of sight of the school-room windows and all was quiet around the farmyard. The pal, "Jud" Squares, was to direct the

falling of the great tree while "Hart" did the actual cutting. The tree was all but down when, in his excitement, Hart made a misstroke and the hatchet glanced, cutting through his shoe and deep into his foot. The screams that followed brought the neighbor's wife hurrying out, and her husband came too and carried the boy into the house where Mrs. Nesbit washed and bandaged the foot and Mr. Nesbit hitched up his horse to take the lad home. Not a word of reproach from either of them; nothing but kindness, gentleness and sympathy,—hard to understand. But at home, at least, retribution would be meted out in the usual form, and liberally. He was sure of that.

His father heard the story and as his face began to reflect what he too clearly conceived to be his duty in such case, Mr. Nesbit said quietly to him, "I think the boy had enough, Phil. Remember, you and I were boys once." To an exceptionally sensitive boy, too little used in those hard, pioneer times to tenderness, one whose conscience too, was hurting him much worse than his foot, such treatment under such circumstances was a unique experience and its influence was to be felt throughout the rest of his life.

But to return to the "Providential" injury. Of course he couldn't go to school with his foot in that condition; much less could he do farm chores. But not in the least, or at any rate, only in the *very* least, did it interfere with operations on the fine new waterwheel he was building. And during the convalescence of the foot he not only got the waterwheel to running, but hitched it up to his stump-pulling machine and *it* worked. The joy of it! How many times have I heard him say that the memory of that short period when his time was all his own was one of the very happiest of his early boyhood. He would lie abed mornings until his father had gone to his work, then get up and hobble down to the stream where the waterwheel was and spend the whole blissful forenoon alone, working, hurrying back to the house in order to be lying down when his father should come in to dinner, and then repeating the morning's program in the afternoon.

He knew exactly how his father's mind worked in such cases; if one were able to tinker, one was able, by the same token, to hoe. Tinkering was a waste of time, and so wicked. Hoeing was serving God, and so righteous. Ergo, tinkering was not to be countenanced, at least not when there was hoeing to do. He feared his father, and also he hated deception and subterfuge, but that creative urge, that law of his being—what *could* he do about it? Throughout his young life there seems to have been a continuous conflict in his soul between obedience to his parents and obedience to this force within him, and it left its mark.

As a boy he did very badly in school. He hated arithmetic, despised grammar, read poorly, although he always loved books—a love fostered by his father who, although owning few books, read these few aloud to his children over and over again. And he told them stories, notably Bible stories, which Hartley always remembered. His love for Mark Twain, which was deep and lasting, began in hearing his father read and re-read “*Roughing It*,” and his lifelong delight in tales of adventure began in the same way.

Spelling, so far as he was concerned, was hopeless from the beginning and he wasted little time on it. Also, he gave up trying to learn to write when, after having made a fair start with his left hand—for he was more left than right-handed—a horrified teacher discovering the offense forbade him on pain of severe punishment ever to write with his left hand again.

In arithmetic he gradually got so far behind his class he resolved that at the beginning of the next term he would give it up altogether. So he told the new teacher that his parents didn’t want him to take arithmetic that year, and the teacher, to his great relief—and to his considerable surprise, also—didn’t press the matter. He must have been eleven or twelve years old at this time. Toward midwinter Father Angle, for some unaccountable reason, seemed to become suspicious of his young son’s proficiency in mathematics. Suddenly, at breakfast one morning, and apropos of nothing at all, he asked in a chilling voice, “Hart, how much is five times five?” Poor Hartley! He knew that his hour had come. Some of you will recall, however, that at least in his later life he was usually ready with an answer. Outwardly calm but inwardly shivering, he replied brightly, “Thirteen.” Darkness gathered on father’s face. “How much is six times seven?” Still brightly, but a little less brightly, came the reply,—“Twenty-seven.” Then the storm broke. It was a bad one. The truth came out with regard to omitting arithmetic from his course that winter. Hartley was sent to his room. Father donned the mantle of teacher. For long weeks, bitter, galling weeks, there was steady drill in tables and in the practice of multiplication and long division. Finally, when flesh and blood could scarcely endure more, they got to fractions, but after a few skirmishes therein it began to be evident that even father was a little apprehensive about results in fractions, and the door of the jail swung open. Such relief! Such untold relief! Can you who knew him see him, in your minds, wrinkle up his eyes and hear him chuckle as he told about this tale?

He didn’t learn the tables at school. There were many things he didn’t learn there, but he and Jud of our former acquaintance, his seatmate, spent endless hours inventing things to make and picturing them on their slates. Jud, he said, could invent faster than he could, and he could reason out

why and how machinery worked more quickly, but he believed himself to be a little the more practical.

In those days their inventions were limited largely to farm machinery,—the machines that they knew best,—and they were not necessarily *new* inventions, but they were new so far as these boys were concerned. They figured out what made steam engines work, or rather, *how* they worked, and Hartley built one, a little stationary engine that would turn wheels and whistle. And a little later he made a turning lathe which was operated by a foot pedal, and he had no end of fun turning out tops on it and rolling pins, potato mashers, handles for everything, clothes pins, croquet balls—every sort of thing that could be made out of wood and turned on a lathe.

As in later years when, as a preliminary to making orthodontic appliances and instruments, he had first to invent and make the tools to make them with, so in those boyhood days he had almost literally to make both tools and materials with which and from which the things he constructed were made, for there was practically no spending money for boys on the farm of a pioneer, and his resources were pitifully limited.

As a very little chap he wanted a jack knife, and he wanted it so badly that his mother finally gave him the opportunity to earn one by allowing him to keep a certain number of the eggs he gathered each day. These he was to sell at the country store and with the proceeds he might buy the knife. Knives were pretty expensive and eggs, of course, were cheap, so it took a good while to accumulate the necessary pennies and he fretted and chafed under the delay.—To the end of his life he never ceased to chafe under delays.

But finally the day came when he could buy the knife. His joy was almost beyond bounds. When he went to bed that night he hid the knife in a safe place and during the night got up in the bright moonlight to hold it in his hand; to look at it and admire its shiny newness and sharpness. He had wanted it *so* much and for *so* long, and now the precious thing was his own, his very own! Poor little lad. He had never had many things of his very own. He came pretty well down toward the end of the series of children and even his clothes were mostly handed down from older brothers. And how he hated to wear them, often several sizes too big!

On the afternoon of the day following the purchase of the knife he went, as usual, through the woods to the pasture for the cows. Of course he had to try that new knife on every interesting-looking bush and shrub he saw. It cut so clean and true. There was nothing disappointing about it.

It was a prize, that's what it was. Well, after he got the cows into the cow-yard, it became necessary to use the knife to repair the peg that fastened the gate. He reached in his pocket. The knife was not there. It *must* be there. But it wasn't there. It was—lost. Perhaps not one of us here can realize that tragedy. And he never found the knife, although he said that for years after he never went over the ground without keeping a sharp lookout for it.

Speaking of the clothes he wore, it would appear that even the occasional garment made expressly for him allowed plenty of room for growth. His mother used linen (they called it 'tow') of her own spinning and weaving for shirts and underclothing, and it was such enduring material that the things for growing boys were cut amply large. On one occasion his new nether garment was just *too* big. He couldn't wear it; he wouldn't wear it, and he would remodel it himself. So he took it into the parlor where he could work undisturbed, spread it out carefully on the almost brand-new "store" carpet that was his mother's pride and joy, took out his jack knife (this was some years after the tragedy and he had acquired another knife), and proceeded to carve off the superfluous material. "Oh, yes," he would always reply to the obvious question at the close of this story,—“oh, yes, the new outline of the drawers remained permanently in the mended carpet.”

So urgent was his constant need for materials, he said that he never went into the woods without keeping a watchful eye out—without “keeping his eye peeled”—for likely pieces of wood for pop-guns, cannon, tongues and axles, hubs and reaches for his wagons, parts for thrashing machines; for any kind of stick that promised material for any use.

Before he was able to acquire a gimlet or augur he used pieces of old pail bales, which he heated at his mother's kitchen stove, to *burn* the holes that simply had to be made. Every piece of old iron, every bolt and screw, even discarded tin cans and the wire from old hoop-skirts were hoarded against a day of need,—things that modern boys with money to buy what they want would wholly scorn. An old clock that some one gave him he treasured as a royal gift.

As he grew older opportunities to earn a little money occurred somewhat oftener. He worked a few weeks one summer for a neighbor at the munificent salary of ten cents a day and, as was his habit, saved it all for the purchase of tools. Those precious tools, so longed for and so hard to get! Yet the joy, finally, of ownership did a good deal in the way of compensation.

The things he made early in his building operations were, naturally, crude. How they looked seems to have been unimportant to him. What mattered was whether or not they worked. He must have been quite a

sizable boy before he became conscious of the appearance of his things, and his first "thug," as he expressed it, in this direction came from his father who said to him one day, "If you must make things all the time, why don't you make them to look like something? That," pointing to whatever was the latest creation, "is a horrible looking thing." And he said that for the first time he realized that it was "a horrible looking thing," and he was ashamed of it.

A second criticism of this kind and one that not only influenced him profoundly, but has, I suspect, been of value to most of his students all of whom must have heard the story, concerned his gate. He was making a gate, a farmyard gate, and it wasn't going well. A man who was stopping at the Angle home for dinner one day, as sundry men had a habit of doing, strolled out, dinner not yet being ready, to look at Hartley's work. The man made some preliminary comments, and then asked, "Did you have a plan of the gate before you started to work on it?" A *plan* for just a *gate*? That was a new idea. He replied that he hadn't had one. "Well," said the man, "if you had had one, if you had had a picture of the finished gate in your mind before you began to work on it, you would have found the work much easier and the gate would have pleased you better."

That bit of wisdom made a deeper and more lasting impression on that boy's mind and was of more practical value to him, I think, than anything he ever heard in a classroom. For thenceforward, I believe, he never made anything, never started to make anything, without first having in his mind a clear picture of the finished thing; a clear picture of "the gate." And today, in our local society, the comments frequently heard that "He saw the gate, all right," or "He didn't see his gate," indicate that he passed the idea on with advantage.

All these years he may not have been getting much out of school, but there can be no question that he was, nevertheless, getting an education, and the kind of education, the kind of mental, yes, and of physical, training that perhaps could not have been bettered for the work that was before him; the work he was born to do. Orthodontia at that time was still in chaos. Its medium of expression, if we may so speak of it, consisted almost wholly in contrivances made out of things designed, at least in large part, for quite other uses. Was not the emerging orthodontist in the person of this boy undergoing development along quite analagous lines and attaining unto his predestined stature through a discipline that was likewise chaotic,—chaotic, that is, in the sense of not being directed or planned or having a goal? For not until this boy was almost a man grown had he any plan in his head for a career; theretofore he had no fixed purpose and no plan for a life work

for which he was definitely and consciously fitting himself. The things he did on his own were done, as has been said, at haphazard, and simply because the urge to do them, the desire, the longing to do them was beyond stifling. And in doing them he was constantly hampered and thwarted because the duties imposed by his parents consumed most of his time. This made him extremely unhappy, even despondent and surly, although naturally of a happy and buoyant disposition. But it was doubtless inevitable that his parents could not realize how vital his own work seemed to him, nor how much real anguish he suffered in not having freedom to do it. Farm life is always hard, the family was large and, in fairness to all, each member had to be required to do his own share. None of the others seemed to care to tinker, and even though Hartley was 'different', justice had to be done. Indeed this mania for tinkering was very disturbing to his father who was ambitious for his children, and used to complain to Hartley's mother that "That boy will tinker his brains all away. He'll never amount to *anything*."

These very limitations, however, served also a most useful purpose. Time being precious, he learned to conserve it by utilizing every free moment. For example, during the short period after dinner while the men were resting, he, having finished his meal before them, would hurry out to "get in some good licks" before being called back with his hoe to the endless corn rows, work that he began at seven years of age. And while he was hoeing corn, or, later, husking it, his mind would increasingly, as he advanced in development, be concentrated on his inventions and on simpler, quicker and easier ways of making them. "Many and many a good point I thought out," I've often heard him say, "that saved me hours of time and labor." And also he often said, "If I hadn't been able to lose myself in concentration on that work in which I was happy, I do not think I could ever have stood the farm drudgery."

Of course he was not then working on orthodontic treatment or the means of doing it, but he certainly was developing the machinery of his mind for just that thing when the time should come. He learned to concentrate, he learned resourcefulness, he learned to think through the thing in hand, he learned to execute with dispatch and accuracy—all these things vital to his later work he learned while he was still a youth, not to the degree to which later life brought them, of course, but the background was all laid, accurate coordination of mind and fingers was already his when the problems of orthodontia became his to work out.

During his middle teens he made some visits to a dentist's office with his mother. It gave him a tremendous thrill. Here was nice, well-cared-for machinery; here was a real "shop" wherein things could be kept in con-

dition and in order,—an infinite removal from the bench near the salt barrel on which the farm tools were usually thrown. He made a great effort to keep that shop at the farm in order. He gave rainy days to it, sharpening the edged tools and attempting to polish the salt-rust from them, putting up hooks on the walls to give each a place of its own and putting each in its place, sweeping the floor, throwing out the rubbish, in general making the place shipshape and tidy. And the next time he went into the shop, to find things in disorder again, and salt spilled over the bench, filled him with such hopeless rage that I suppose nothing short of the picturesque language some of you heard him employ in later days could do justice to his feelings. His love for fine tools amounted almost to reverence and he treated his own kindly. But on the farm his rights were not always carefully observed, and the abuse by others of his own dearly bought, scanty supply was gall and wormwood to him.

In the dentist's office he saw infinite opportunity to work out in peace and quiet any idea that should come his way. The things a dentist made were small and dainty and workmanlike. And they were made of gold and could be polished and made beautiful. It all appealed to him as nothing before in his life had appealed. He resolved to become a dentist. Orthodontia had come to the world through dentistry. Would it not follow that the first orthodontist had, therefore, to come through dentistry? The art and the artist must meet.

His first acquaintance with orthodontia came while he was in dental college when he heard part of two lectures on the subject, lectures otherwise devoted to prosthetic dentistry. It caught his immediate attention, indeed, interested him so much that he was led to read everything he could find on the subject.

He undertook the treatment of his first case—that of a friend only a few years younger than himself, and a difficult case—very soon after he got into practice, and for it devised his first appliance, the jackscrew.

It is hard to imagine today, isn't it, anyone having the temerity to undertake the treatment of a difficult, adult case of malocclusion with only the resources of one's own mind to anchor to; the underlying principles of the science, the goal to strive for, even the very mechanical devices to be employed, all being still "in the darkness." (It was Dr. Angle's habit to say that his inventions "came out of the darkness"). But all his life this young person had been coping with problems in the unknown, that is, unknown so far as his knowledge went, and this one appealed perhaps with more zest than those of former years, doubtless because it presented more unknown elements.

After orthodontia became his profession it was always the case that presented new problems which interested him most. I suppose this may have been one of the secrets of his permanent interest in and enthusiasm for orthodontia—the problems were infinite.

The obstacles and handicaps that he encountered in the work seem never to have been more to him than something to get around or through; something to be “outwitted,” to use his own expression. The idea of being defeated by them never seemed to occur to him. The very strength of his desire for a correct result seemed to have some occult force in producing the result. He used laughingly to say of some especially perplexing problem, that the only difference between the difficult and the impossible was that the impossible took longer.

For many annoyances and irritations he had small patience, but rarely indeed did he ever become impatient over problems either of treatment or invention, and of course, in the earlier days, the problems of treatment were, in a sense, largely those of invention. Occasionally, later in life, if he were very tired, or was exasperated by the limitations of his field, the oral cavity, and by the minuteness of the things he had to work on, he would exclaim, “Oh, why couldn't I have been a bridge-builder with room to work and things I could see to work with!” And sometimes, under dire stress, he would swear, feeling with Mark Twain, that “in certain trying circumstances, urgent circumstances, desperate circumstances, profanity offered a relief denied even to prayer.” But, as the biographer also says of Mark Twain, “Somehow his profanity was seldom an offense.”

Usually his patience was amazing. I have known him to spend two days or more filing out by hand an almost infinitesimal model, and then, just as he was putting on the last light, finishing touches, have it fly off into space and never be found, although together we would search the floor, the bench, the window-sills, the cuffs of his trousers—all the places there were to search, almost literally with a fine-tooth comb. Without a word, or at least with nothing more than, “Oh, let the damn thing go”, he would begin on another which might take him another two days or longer to finish, filing, filing, filing, with a magnifying glass always at his eye.

His students, I suppose, thought him a severe taskmaster; often very severe, but much as he required of them, he always demanded more of himself. With himself, in everything pertaining to orthodontia, he was relentless in his efforts to attain perfection.

In thinking over the vicissitudes of Dr. Angle's life, since his death, I have sometimes found myself wondering whether, if he were to live his life over again, he would be an orthodontist. I am sure that he would have been

because, first, I sincerely believe that he would, as before, have had no choice in the matter; and secondly, I think that if he had had a choice, if he could have known from the beginning all that lay before him in that field of trial, of disappointment and heartache, of misunderstanding real and pretended, of criticism and abuse that sometimes actually put him to bed, ill; of worries, cares, irritations and annoyances,—I believe that if he could have known all of this he would still not have turned his back on orthodontia, but would have squared his shoulders, compressed his lips in his characteristic way, and faced it. It was *his* work. But he loved it. Indeed, he loved orthodontia as I suppose it is given to few men to love their work. It was hard and often seemed thankless, but it was not by any means only hard, troublous, sorrowful. Orthodontia brought him many radiant joys, many dearly loved friends, many triumphs, many infinite satisfactions. In orthodontia he found himself. In orthodontia he experienced lasting joy in accomplishment. And at the end I think he might have said, with St. Paul, “I have fought a good fight, I have finished my course, I have kept the faith”.

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