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THE MANLY ART OF OBSERVATION AND DEDUCTION

JOHN C. HOGAN AND MORTIMER D. SCHWARTZ

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Mr. Sherlock Holmes knew how to tell at a glance the history of a man and his calling. Mr. Holmes could do this because he had trained himself in the art of observation and analysis. Based on what he saw and heard in those first few moments, he could make startling deductions about a stranger. "By a man's finger-nails, by his coat-sleeves, by his boots, by his trouser-knees, by his callosities on his forefinger and thumb, by his expression, by his shirt-cuffs—by each of these things a man's calling is plainly revealed," says Mr. Holmes. "What ineffable twaddle!" cried Dr. Watson. Science has shown, however, that Mr. Holmes was correct and that Dr. Watson was wrong, for in the solution of crime much valuable information about a suspect can be learned simply by observation and deduction.

It is not necessary to be a professional detective in order to practice this art. Anyone can sharpen his faculties for observation and can make deductions as Mr. Holmes did, if he knows where to look and what to look for. It may seem like a hopeless exercise upon first meeting a stranger and before a word is ever spoken to deduce his background, place of origin, occupation, and affiliation. Yet such deductions are highly possible and quite useful in any kind of work, and when disclosed, they are startling not only to the person himself but to everyone else who overhears them. This art can be acquired, but only after long and patient study.

The foundation of Mr. Holmes' method rests upon a recognition of the importance of the little things. "You know my method," he once told Dr. Watson, "it is founded upon the observance of trifles." At another place, he remarked: "It has long been an axiom of mine that the little things are infinitely the most important. . . . Never trust to general impressions . . . but concentrate yourself upon details." As a source of clues, he never overlooked the significance of coat-sleeves

and the suggestiveness of finger-nails, and he recognized that the solution of a great crime may sometimes hang from a simple boot-lace. On being introduced to a stranger, for example, Mr. Holmes explained: "My first glance is always at a woman's sleeve. In a man it is perhaps better first to take the knee of the trouser."

Information on Mr. Holmes' method has not been widely circulated, not only, possibly, because he did not want the criminal underworld to learn his techniques, but also because of his extreme modesty. "If I show you too much of my method of working," he once remarked, "you will come to the conclusion that I am a very ordinary individual after all." There is, however, a magazine article entitled "The Book of Life," authored by Mr. Holmes and reprinted in part in *A Study in Scarlet*, in which he shows "how much an observant man might learn by an accurate and systematic examination of all that came his way." By a momentary expression, a twitch of a muscle or a glance of an eye, he argued, it is possible to fathom a man's innermost thoughts. Deceit, he maintained, is an impossibility in the presence of one trained in the art of observation and analysis. "From a drop of water," he wrote, "a logician could infer the possibility of an Atlantic or a Niagara without having seen or heard of one or the other. So all life is a great chain, the nature of which is known whenever we are shown a single link of it."

A better understanding of Mr. Holmes' techniques, and their simplicity, can be gleaned from his case records. For example, "You have been in Afghanistan, I perceive," said Mr. Holmes upon being introduced to a stranger whom he had never laid eyes on before. With this elementary deduction began the friendship between Sherlock Holmes and Dr. Watson, and not until some time later, when the two men were working on the case of *A Study in Scarlet*, did the astonished Watson

learn the chain of reasoning whereby Holmes had arrived at this deduction:

"I *knew* you came from Afghanistan," explained Holmes. "From long habit the train of thoughts ran so swiftly through my mind that I arrived at the conclusion without being conscious of intermediate steps. There were such steps, however. The train of reasoning ran, 'Here is a gentleman of a medical type, but with the air of a military man. Clearly an army doctor, then. He has just come from the tropics, for his face is dark, and that is not the natural tint of his skin, for his wrists are fair. He has undergone hardship and sickness, as his haggard face says clearly. His left arm has been injured. He holds it in a stiff and unnatural manner. Where in the tropics could an English army doctor have seen much hardship and got his arm wounded? Clearly in Afghanistan.' The whole train of thought did not occupy a second. I then remarked that you came from Afghanistan, and you were astonished."

Although Mr. Holmes was able to deduce such useful information from merely observing a man, he also possessed a "lot of special knowledge" which he applied to problems and which helped him in this aspect of his work.

The following incident, which occurred in his sitting-rooms at 221-B Baker Street, London, will serve to show the distinction that Mr. Holmes made in criminal work between *observation* and *deduction*. Dr. Watson had carelessly remarked that surely the one to some extent implies the other, whereupon Mr. Holmes sharply replied:

"Why, hardly . . . For example, observation shows me that you have been to the Wigmore Street Post-Office this morning, but deduction lets me know that when there you dispatched a telegram."

"Right!" said Watson. "Right on both points! But I confess that I don't see how you arrived at it."

"It is simplicity itself," remarked Holmes . . . "so absurdly simple that an explanation is superfluous; and yet it may serve to define the limits of observation and deduction. Observation tells me that you have a little reddish mould adhering to your instep. Just opposite the Wigmore Street Office they have taken up the pavement and thrown up some earth, which lies in such a way that it is difficult to avoid treading in it in entering. The earth is of this peculiar reddish tint which is found, as far as I

know, nowhere else in the neighborhood. So much is observation. The rest is deduction.

"How, then, did you deduce the telegram?"

"Why, of course, I know that you had not written a letter, since I sat opposite to you all morning. I see also in your open desk there that you have a sheet of stamps and a thick bundle of postcards. What else could you go into the post-office for, then, but to send a wire? Eliminate all other factors, and the one which remains must be the truth."

It was rare for Mr. Holmes to explain in such detail the chain of reasoning behind his deductions, especially to anyone but Dr. Watson, but in this case, he was apparently educating his colleague in the art of observation and analysis.

"The murderer," announced Mr. Holmes, "is a tall man, left-handed, limps with the right leg, wears thick-soled shooting-boots and a grey cloak, smokes Indian cigars, uses a cigar holder, and carries a blunt pen-knife in his pocket." There were several other indications of the man, but these would be sufficient, he felt, to start the search which would solve *The Boscombe Valley Mystery*. Inspector Lestrade of Scotland Yard laughed, for he knew that Mr. Holmes had never laid eyes upon the person he was describing. Later, when they were alone, Holmes explained to Watson how the deductions were made: the height of the man, he had judged from the length of his stride as measured from boot prints at the scene of the crime; the fact of lameness was shown by the impression of the right foot which was always less distinct; the fatal blow had been struck from immediately behind, yet its mark was on the left side of the body, signifying a left-handed man; cigar ashes found behind a tree and the stub of a cigar, the kind rolled in Rotterdam, Holmes had identified as of the Indian variety; the tip of the cigar stub had been cut off, not bit off, indicating the use of a pen-knife, but the cut was not a clean one, hence the knife must have been dull. Mr. Holmes thus drew a net securely around this unseen man from which he could not escape, and at the same time, he cut the cord that was hanging an innocent person.

Mr. Trevor senior, who had heard about Mr. Holmes' powers of deduction, asked the great detective to deduce something from observing him, whereupon Mr. Holmes gladly obliged: "I might suggest that you have gone about in fear of some personal attack within the last twelve-months," began Holmes. He then explained that Trevor had boxed a great deal in his youth, had

done some digging in his life, and had been intimately associated with someone whose initials were "J.A." but whom he now wished to forget. The old man, upon hearing these last words, collapsed in a dead faint! In the case of *The "Gloria Scott"*, following Trevor's recovery, Mr. Holmes explained how he arrived at these startling deductions: the old man carried a handsome cane with melted lead concealed in its head so as to make it a formidable weapon, from which Mr. Holmes deduced the fear of an attack; the man's ears had that peculiar flattening and thickening which marks the boxing man; the many callosities on his hands signified a great deal of digging; in a tattoo, at the bend of his elbow, were the letters "J.A.," still legible but blurred in appearance, and the staining of the skin around them indicated that efforts had been made to remove them, from which Holmes deduced the desire to forget the person. "What an eye you have," cried the revived Trevor. "It is just as you say."

On being introduced to the unhappy John Hector McFarlane, who figured prominently in the case of *The Norwood Builder*, Mr. Holmes observed the untidiness of his visitor's attire, the sheaf of legal papers under his arm, his distinctive watch-charm, and his difficulty in breathing, and then declared: "I assure you that, beyond the obvious facts that you are a bachelor, a solicitor, a Freemason, and an asthmatic, I know nothing whatever about you." At another time, from a spot across the street, before he ever met the man, Mr. Holmes was able correctly to identify a messenger as a retired sergeant of the Marines. He told Dr. Watson, in *A Study in Scarlet*,

"It was easier to know it than to explain why I know it. If you were asked to prove that two and two made four, you might find some difficulty, and yet you are quite sure of the fact. Even across the street I could see a great blue anchor tattooed on the back of the fellow's hand. That smacked of the sea. He had a military carriage, however, and regulation side whiskers. There we have the marine. He was a man with some amount of self-importance and a certain air of command. You must have observed the way in which he held his head and swung his cane. A steady, respectable, middle-aged man, too, on the face of him—all facts which led me to believe that he had been a sergeant."

"Wonderful!" exclaimed Watson. "Common-place," replied Holmes.

"Pipes are occasionally of extraordinary interest," said Mr. Holmes. "Nothing has more

individuality, save perhaps watches and boot-laces." This remark, from the case of *The Yellow Face*, was occasioned by a nice old brier with a good long amber stem which had been left behind by a visitor at 221-B Baker Street. Although Mr. Holmes had never laid eyes upon the owner of the pipe, he made the following startling deductions about the man simply from observing his pipe: the man's mind was disturbed with some pressing problem; he evidently valued highly this particular pipe; he was a muscular man, left-handed, with an excellent set of teeth, careless in his habits, and with no need to practice economy. Asked by Dr. Watson how he knew all this, Mr. Holmes held the pipe up and tapped it with his long forefinger, as a professor might who was lecturing on a bone:

"This is Grosvenor mixture at eightpence an ounce," Holmes answered, knocking a little out on his palm. "As he might get an excellent smoke for half the price, he has no need to practice economy. . . . He has been in the habit of lighting his pipe at lamps and gas-jets. You can see that it is quite charred down one side. Of course a match could not have done that. Why should a man hold a match to the side of his pipe? But you cannot light it at a lamp without getting the bowl charred. And it is all on the right side of the pipe. From this I gather that he is a left-handed man. You hold your own pipe to the lamp and see how naturally you, being right-handed, hold the left side to the flame. You might do it once the other way, but not as a constancy. This has always been held so. Then he has bitten through his amber. It takes a muscular, energetic fellow, and one with a good set of teeth, to do that. But if I am not mistaken I hear him upon the stair, so we shall have something more interesting than his pipe to study."

Moments later the door opened and the owner of the pipe entered the room. Even before being introduced to the man, Mr. Holmes addressed him as Mr. Grant Munro. He had observed that name on the lining of his visitor's hat!

It is difficult for a person to have any object in daily use without leaving the impress of his individuality upon it in some manner that a trained observer might read it. For example, Dr. Watson produced a pocket watch which had recently come into his possession, and he challenged Mr. Holmes to offer some opinions upon the character and habits of the former owner. This occurred during the time of *The Sign of Four* when the great detective had not been occupied with any particular case and craved some mental exaltation, some

brainwork. Holmes balanced the watch in his hands for a few moments, gazing at the dial, opening the back and examining the works, first with the naked eye and then with a powerful convex lens. "The watch has recently been cleaned," he remarked with disappointment. Watson admitted the truth of this observation, whereupon Mr. Holmes made the following statements about the former owner of the watch: the time-piece had belonged to Watson's elder brother who had inherited it from his father; the brother was a man of untidy habits—very untidy and careless; he was left with good prospects, but had thrown away his chances, lived for some time in poverty, with occasional short intervals of prosperity; finally, he had taken to drink, and had died. Dr. Watson sprang from his chair and bitterly charged Holmes with having made some previous inquiries into the past history of his unhappy brother which he now pretended to deduce in some fanciful way from that watch! "I assure you," said Holmes, "that I never knew that you had a brother until you handed me the watch." Pointing to the initials "H.W." on the back of the watch, Holmes explained: "The W. suggests your own name. The date of the watch is nearly fifty years back, and the initials are as old as the watch: so it was made for the last generation. Jewellery usually descends to the eldest son, and he is most likely to have the same name as the father. Your father has, if I remember right, been dead many years. It has, therefore, been in the hands of your eldest brother. . . . When you observe the lower part of that watch-case you notice that it is not only dented in two places but it is cut and marked all over from the habit of keeping other hard objects, such as coins or keys, in the same pocket. . . . a man who treats a fifty-guinea watch so cavalierly must be a careless man. Neither is it a very far-fetched inference that a man who inherits one article of such value is pretty well provided for in other respects. . . . It is very customary of pawn-brokers in England, when they take a watch, to scratch the numbers of the ticket with a pin-point upon the inside of the case. It is more handy than a label as there is no risk of the number being lost or transposed. There are no less than four such numbers visible to my lens on the inside of this case. Inference—that you brother was often in low water. Secondary inference—that he had occasional bursts of prosperity, or he could not have redeemed the pledge. Finally, I ask you to look at the inner plate, which contains the keyhole. Look at the thousands of scratches all round the

hole—marks where the key has slipped. What sober man's key could have scored those grooves? But you will never see a drunkard's watch without them. He winds it at night, and he leaves these traces of his unsteady hand. Where is the mystery in all this?" It is necessary, as Mr. Holmes did, to observe the small facts upon which large inferences may depend.

A lost hat can be an interesting intellectual problem, especially to one who finds it and wants to restore it to the unknown owner. About four o'clock on Christmas morning, when he was returning home from some small jollification, Commissioner Peterson found an old battered felt, with the initials "H.B." legible upon its lining. The hat figured prominently in the case of *The Blue Carbuncle* and in the following colloquy between Holmes and Watson:

"Here is my lens," said Holmes. "You know my methods. What can you gather yourself as to the individuality of the man who has worn this article?"

Watson took the tattered object. . . and turned it over rather ruefully. It was a very ordinary black hat of the usual round shape, hard and much the worse for wear. The lining had been of red silk, but was a good deal discoloured. There was no maker's name; but. . . the initials "H.B." were scrawled upon one side. It was pierced in the brim for a hat-securer, but the elastic was missing. For the rest, it was cracked, exceedingly dusty, and spotted in several places, although there seemed to have been some attempt to hide the discoloured patches by smearing them with ink.

"I can see nothing," said Watson. . . .

"On the contrary, Watson, you can see everything. You fail, however, to reason from what you see. You are too timid in drawing your inferences."

"Then, pray tell me what it is that you can infer from this hat?"

He picked it up and gazed at it in the peculiar introspective fashion which was characteristic of him. "It is perhaps less suggestive than it might have been," he remarked, "and yet there are a few inferences which are very distinct, and a few others which represent at least a strong balance of probability. That the man was highly intellectual is of course obvious upon the face of it, and also that he was fairly well-to-do within the last three years, although he has now fallen upon evil days. He had foresight, but has less now than formerly, pointing to a moral

retrogression, which, when taken with the decline of his fortunes, seems to indicate some evil influence, probably drink, at work upon him. This may account also for the obvious fact that his wife has ceased to love him."

"My dear Holmes!"

"He has, however, retained some degree of self-respect," he continued. . . . "He is a man who leads a sedentary life, goes out little, is out of training entirely, is middle-aged, has grizzled hair which he has had cut within the last few days, and which he anoints with lime-cream. These are the more patent facts which are to be deduced from his hat. Also, by the way, that it is extremely improbable that he has gas laid on in his house."

"You are certainly joking, Holmes."

"Not in the least. Is it possible that even now, when I give you these results, you are unable to see how they are attained?"

"I have no doubt that I am very stupid, but I must confess that I am unable to follow you. For example, how did you deduce that this man was intellectual?"

For answer Holmes clapped the hat upon his head. It came right over the forehead and settled upon the bridge of his nose. "It is a question of cubic capacity," said he; "a man with so large a brain must have something in it."

"The decline of his fortunes, then?"

"This hat is three years old. These flat brims curled at the edge came in then. It is a hat of the very best quality. Look at the band of ribbed silk and the excellent lining. If this man could afford to buy so expensive a hat three years ago, and has had no hat since, then he has assuredly gone down in the world."

"Well, that is clear enough, certainly. But how about the foresight and the moral retrogression?"

Sherlock Holmes laughed. "Here is the foresight," said he, putting his finger upon the little disc and loop of the hat-securer. "They are never sold upon hats. If this man ordered one, it is a sign of a certain amount of foresight, since he went out of his way to take this precaution against the wind. But since we see that he has broken the elastic and has not troubled to replace it, it is obvious that he has less foresight now than formerly, which is a distinct proof of a weakening nature. On the other hand, he has endeavoured to conceal some of these stains upon the felt by daubing them with ink, which is a sign that he has not entirely lost his self-respect."

"Your reasoning is certainly plausible."

"The further points, that he is middle-aged, that his hair is grizzled, that it has been recently cut, and that he uses lime-cream, are all to be gathered from a close examination of the lower part of the lining. The lens discloses a large number of hair-ends, clean cut by the scissors of the barber. They all appear to be adhesive, and there is a distinct odour of lime-cream. This dust, you will observe, is not the gritty, gray dust of the street but the fluffy brown dust of the house, showing that it has been hung up indoors most of the time; while the marks of moisture upon the inside are proof positive that the wearer perspired very freely, and could therefore, hardly be in the best of training."

"But his wife—you said that she had ceased to love him."

"This hat has not been brushed for weeks. When I see you, my dear Watson, with a week's accumulation of dust upon your hat, and when your wife allows you to go out in such a state, I shall fear that you also have been unfortunate enough to lose your wife's affection."

"But he might be a bachelor."

"Nay, he was bringing home the goose as a peace-offering to his wife. Remember the card upon the bird's leg."

"You have an answer to everything. But how on earth do you deduce that the gas is not laid on in his house?"

"One tallow stain, or even two, might come by chance; but when I see no less than five, I think that there can be little doubt that the individual must be brought into frequent contact with burning tallow—walks upstairs at night probably with his hat in one hand and a guttering candle in the other. Anyhow, he never got tallow-stains from a gas-jet. Are you satisfied?"

When Sherlock Holmes was first introduced to Miss Mary Sutherland, he startled the young lady with a pointed question: "Do you not find that with your short sight it is a little trying to do so much typewriting?" From observations made of her, Mr. Holmes was able to deduce that she was a typewrist, that she was short-sighted, that she had come away from home that morning in a hurry, and that she had handwritten a note, using violet ink, before leaving home but after being fully dressed. The startled lady, who figured in *A Case of Identity*, never did learn the basis of these deductions, but Holmes later explained them to Watson:

"... this woman had plush upon her sleeves, which is a most useful material for showing traces. The double line a little above the wrist, where the typewritist presses against the table, was beautifully defined. The sewing-machine, of the hand type, leaves a similar mark, but only on the left arm. . . . I then glanced at her face, and observing the dint of a pince-nez at either side of her nose, I ventured a remark upon short sight and typewriting, which seemed to surprise her. . . . I was then much surprised and interested on glancing down to observe that, though the boots which she was wearing were not unlike each other, they were really odd ones; the one having a slightly decorated toe-cap, and the other a plain one. One was buttoned only in the two lower buttons out of five, and the other at the first, third, and fifth. Now, when you see that a young lady, otherwise neatly dressed, has come away from home with odd boots, half-buttoned, it is no great deduction to say that she came away in a hurry. . . . I noted, in passing, that she had written a note before leaving home but after being fully dressed . . . her right glove was torn at the forefinger . . . both glove and finger were stained with violet ink. She had written in a hurry and dipped her pen too deep. It must have been this morning, or the mark would not remain clear upon the finger. All this is amusing, though rather elementary, but I must go back to business."

Mr. Holmes, incidentally, was interested in typewritists and their machines, and he had even given some thought to preparing a monograph on *The Typewriter and its Relation to Crime*. A typewriter, he said, "has really quite as much individuality as a man's handwriting. Unless they are quite new, no two of them write exactly alike."

"Beyond the obvious fact that he has at some time done manual labor, that he takes snuff, that he is a Freemason, that he has been in China, and that he has done a considerable amount of writing lately, I can deduce nothing else," said Mr. Holmes concerning his client Mr. Jabez Wilson. The client, who was involved in the affair of *The Red-Headed League*, was startled by this statement, and he asked how Mr. Holmes had acquired the information. The chain of reasoning, Holmes explained, ran as follows: *manual labor*—Wilson's right hand was quite a bit larger than his left, the muscles being more developed because he had worked with it; *Freemason*—he wore an arc-and-compass breastpin which Holmes had been care-

fully observing; *snuff*—obvious to anyone in the man's presence; *writing*—Wilson's right cuff was very shiny for five inches, while the left sleeve contained a smooth patch where the elbow rested upon a desk; *residence in China*—the tattoo of a fish immediately above his right wrist could only have been made in China. "I have made a small study of tattoo marks," said Holmes, "and have even contributed to the literature on the subject. That trick of staining the fishes' scales of a delicate pink is quite peculiar to China. When, in addition, I see a Chinese coin hanging from your watch-chain, the matter becomes even more simple."

Holmes sat gazing fixedly at Dr. Watson's boots. It occurred at the time of *The Disappearance of Lady Frances Carfax*. The fact that the boots were fastened with an elaborate double bow, which was not Dr. Watson's usual method of tying them, led to the deduction that his colleague had recently visited a Turkish bath! "Who has tied them?" asked Holmes. "A bootmaker—or the boy at the bath? It is unlikely that it is the bootmaker, since your boots are nearly new. Well, what remains: The bath." Holmes also deduced that Watson had shared his cab that morning: "You observe that you have some splashes on the left sleeve and shoulder of your coat. Had you sat in the center of a hansom you would probably have had no splashes, and if you had they would certainly have been symmetrical. Therefore it is clear that you sat at the side. Therefore it is equally clear that you had a companion."

The victim was poisoned, explained Mr. Holmes after he had examined the body and the room where there was some writing on the wall. And he added:

"There has been a murder done, and the murderer was a man. He was more than six feet high, was in the prime of life, had small feet for his height, wore coarse, square-toed boots and smoked a Trichinopoly cigar. He came here with his victim in a four-wheeled cab, which was drawn by a horse with three old shoes and one new one on his off fore-leg. In all probability the murderer had a florid face, and the fingernails of his right hand were remarkably long. These are only a few indications, but they may assist you.

Inspector Lestrade and his assistant Gregson looked at each other with an incredulous smile, for they knew Mr. Holmes had never seen the suspect he was describing. The case was *A Study in Scarlet*, and Holmes later explained to Watson

the reasoning behind these deductions: The very first thing that he observed on arriving at the scene of the crime was that a cab had made two ruts with its wheels close to the curb; up to last night, there had been no rain for a week, so the wheels that left such a deep impression must have been there during the night; there were also marks from the horse's hoofs, one of which was clearer than all the others, showing that there was a new shoe. Since the cab was there after the rain began, and was not there anytime during the morning, it follows that it must have been there during the night, and therefore have brought the two persons to the house. Asked how he deduced the man's height, Holmes explained:

"Why, the height of a man, in nine cases out of ten can be told from the length of his stride. It is a simple calculation enough, though there is no use my boring you with figures. I had this fellow's stride both on the clay outside and on the dust within. Then I had a way of checking my calculation. When a man writes on a wall his instinct leads him to write above the level of his own eyes. Now that writing was just over six feet from the ground."

The man's age he had deduced from the fact that he avoided a puddle in the garden which was at least four and a half feet across. He had also found square-toed boot prints beside the puddle. The writing on the wall had been done with a man's forefinger dipped in blood, and hence the long finger-nails. Some scattered ashes that he found on the floor, he had identified as the dark flaky ash made only by a Trichinopoly. In this connection, it should perhaps be noted that Mr. Holmes was an expert on tobacco ashes having authored a monograph on the subject, *Upon the Distinction Between the Ashes of the Various Tobaccos*, which work enumerates one hundred and forty forms of cigar, cigarette, and pipe tobaccos, with many colored plates that illustrate the different ashes. In this book, he explains that "to the trained eye there is as much difference between the black ash of a Trichinopoly and the white fluff of bird's-eye as there is between a cabbage and a potato."

Watson married, and then drifted away from his friend Holmes for a time, but the *Scandal in Bohemia* threw the two men together again, and Holmes surprised his old colleague upon meeting him by remarking that he was obviously back in medical practice, that he had been getting himself wet lately, and that he had a most clumsy and careless servant girl at home. Admitting that his

wife had already given Mary Jane notice because of her inferior work, Watson was curious how Holmes had worked all this out. "It is simplicity itself," replied Holmes. "My eyes tell me that on the inside of your left shoe, just where the firelight strikes it, the leather is scored by six almost parallel cuts. Obviously they have been caused by someone who has very carelessly scraped round the edges of the sole in order to remove crusted mud from it. Hence, you see, my double deduction that you have been out in the vile weather, and that you had a particularly malignant boot-slicing specimen of the London slavey. As to your practice, if a gentlemen walks into my rooms smelling of iodoform, with a black mark of nitrate of silver upon his right forefinger, and a bulge on the right side of his top-hat to show where he has secreted his stethoscope, I must be dull, indeed, if I do not pronounce him to be an active member of the medical profession." Watson concluded that it was all "ridiculously simple."

Soon after his marriage, Watson purchased a general medical practice from old Mr. Farquhar who was aging. For many months, Watson was busy with his new patients and saw very little of his friend Sherlock Holmes. One morning, as Watson sat alone at the breakfast table reading the *British Medical Journal*, Holmes came around to inquire whether he would like to renew their old experiences in criminology, the case this time being *The Stock-Broker's Clerk*. While they sat discussing the matter, Holmes noticed the pair of patent-leather house slippers that Watson wore, and from these he was able to deduce that his colleague had not been well lately and had confined himself at home because of a summer cold. Surprised by this deduction, Watson inquired how he had come by it: "Your slippers are new," said Holmes. "You could not have had them more than a few weeks. The soles which you are at this moment presenting to me are slightly scorched. For a moment I thought they might have got wet and been burned in the drying. But near the instep there is a small circular wafer of paper with the shopman's hieroglyphics upon it. Damp of course would have removed this. You had, then, been sitting with your feet outstretched to the fire, which a man would hardly do even in so wet a June as this if he were in his full health. . . . I am afraid that I rather give myself away when I explain. Results without causes are much more impressive."

"I see that you are professionally rather busy

just now," remarked Holmes one day to his colleague. "Yes, I've had a busy day," replied Watson, "but really I don't know how you deduced it." Holmes, who at the time was engaged in the case of *The Crooked Man*, chuckled to himself. "I have the advantage of knowing your habits, my dear Watson," said he. "When your round is a short one you walk, and when it is a long one you use a hansom. As I perceive that your boots, although used, are by no means dirty, I cannot doubt that you are at present busy enough to justify the hansom." "Excellent," cried Watson. "Elementary," replied Holmes.

We have been analyzing a class of elementary deductions in which the train of reasoning is not very obscure. More advanced work in the art of observation and analysis is possible, however, and the following example is indicative of the sort of maturity that is possible:

"You are right, Watson," exclaimed Holmes. "It does seem a very preposterous way of settling a dispute." This remark caused Dr. Watson to sit up in his chair and to stare at his colleague in amazement! Without a word having been exchanged between the two men, Mr. Holmes had been able to read the reverie of his colleague and to break into it as proof that he had been in rapport with him! A close observer can sometimes follow the unspoken thoughts of his companion and can make deductions simply by observing his features. In the case at hand, *The Resident Patient*, Holmes explained this phenomenon as follows:

"After throwing down your paper, which was the action which drew my attention to you, you sat for half a minute with a vacant expression. Then your eyes fixed themselves upon your newly framed picture of General Gordon, and I saw by the alteration in your face that a train of thought had been started. But it did not lead very far. Your eyes turned across to the unframed portrait of Henry Ward Beecher, which stands upon the top of your books. You then glanced up at the wall, and of course your meaning was obvious. You were thinking that if the portrait were framed it would just cover that bare space and correspond with Gordon's picture over there."

"You have followed me wonderfully!" exclaimed Watson.

"So far I could hardly have gone astray. But now your thoughts went back to Beecher, and you looked hard across as if you were studying the character in his features. Then your eyes ceased to pucker, but you continued to look across, and your face was thoughtful. You were recalling the incidents of Beecher's career. I was well aware that you could not do this without thinking of the mission which he undertook on behalf of the North at the time of the Civil War, for I remember you expressing your passionate indignation at the way in which he was received by the more turbulent of our people. You felt so strongly about it that I knew you could not think of Beecher without thinking of that also. When a moment later I saw your eyes wander away from the picture, I suspected that your mind had now turned to the Civil War, and when I observed that your lips set, your eyes sparkled, and your hands clinched, I was positive that you were indeed thinking of the gallantry which was shown by both sides in that desperate struggle. But then, again, your face grew sadder; you shook your head. You were dwelling upon the sadness and horror and useless waste of life. Your hand stole towards your own old wound, and a smile quivered on your lips, which showed me that the ridiculous side of this method of settling international questions had forced itself upon your mind. At this point I agreed with you that it was preposterous, and was glad to find that all my deductions had been correct."

"Absolutely!" said Watson. "And now that you have explained it, I confess that I am as amazed as before."

"It was very superficial, my dear Watson, I assure you," replied Holmes.

Let the investigator first learn to master thoroughly two of the three qualities which Mr. Holmes said are necessary for the ideal detective—the power of observation and that of deduction—before undertaking the more advanced mental and moral aspects of the art which present the greatest difficulties and which require proficiency in the third quality—namely, not to be wanting in knowledge!