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DR I. E. TAYLOR
ON DISEASE OF
SUPRA RENAL CAPSULE'S

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THE
SUNBURNT APPEARANCE OF THE SKIN.

AS AN EARLY DIAGNOSTIC SYMPTOM OF

Supra Renal Capsule Disease.

BY

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(With Colored Illustrations.)

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The Sunburnt Appearance of the Skin

AS AN EARLY DIAGNOSTIC SYMPTOM OF

SUPRA RENAL CAPSULE DISEASE.

THE attention of the medical profession has been directed by Dr. Thomas Addison, of London, in a monograph, published May, 1855, to a new form of disease in which the supra renal capsules are involved, and of so serious a nature, as to prove fatal in every instance that has been reported where an autopsy has been made, and having, as one of its most marked and prominent symptoms, the discoloration of the skin. This discoloration, according to Dr. Addison, at page 5 of his Monograph, "pervades the whole surface of the body, but is commonly most strongly manifested on the face, neck, superior extremities, penis, scrotum, and in the flexures of the axilla, and around the navel. It may be said to present a dingy or smoky appearance, or various tints or shades of deep amber or chesnut brown; and in one instance, the skin was so universally and so deeply darkened, that it might have been mistaken for a mulatto." At page 7, line 17, Dr. Addison further remarks, "that the great distinctive mark of this form of anæmia is the singular dingy or dark discoloration of the skin; nevertheless, at a very early period of the disorder, and when the capsules are less extensively diseased, the discoloration may doubtless be so slight and equivocal as

to render the source of the anæmic condition uncertain; and when, on a searching inquiry into the history of the case, no miasmatic poison can be detected, or malignant visceral disease found, and when to all this is superadded a dark, dingy, or smoky looking discoloration of the integument, he shall be justified at least in entertaining a strong suspicion in some instances—a suspicion amounting almost to certainty in others. It must, however, be observed, that every tinge of yellow, or mere sallowness, throws a still greater doubt over the true nature of the case, and that the more decided the discoloration partakes of the character described, the stronger ought to be our impression as to the capsular origin of the disorder.” I have copied these quotations from the monograph of Dr. Addison, as it is probable but few have met with it, and they are given in his own language, for I have not been able to discover, in his essay on the subject, the term “bronze” applied as it appears to have been given to the discoloration, by Dr. Jonathan Hutchinson, in the report of his collected cases, published in the *Medical Times and Gazette*, of London, 1855 and 1856. Though the application of the word “bronze,” to the character of the discoloration, might appear proper, yet it could only be in the more advanced cases, for in the early stages of the disease, I have not been able to recognize its adaptation, and even in the advanced cases, the analogy to the color of the mulatto, or rather of a West Indian, seems more correct and just. In the quotation from page 7, line 19, reference is made to the color, “doubtless being so *slight* and *equivocal*, as to render the source of the anæmic condition uncertain;” and on page 8, line 1, “Every tinge of *yellowness*, or mere *sallowness*, throws a still greater doubt on the true nature of the case.” On examining the cases of Dr. Addison, it appears that the discoloration had existed for some length of time, and in some it was not recognized till after death; and that they were not therefore seen in the early stage of the discoloration and disease, and I believe it will be shown that the dingy, or smoky, or deep amber, or chestnut-brown, or mulatto appearance of the discoloration, becomes quite characteristic when the disease is of a chronic nature.

In the publication of the cases which have come under my observation, I would particularly wish to call the attention of the profession to the discoloration of the skin, and the pigment on the lips, as I believe in the early, and in two cases in the incipient, stage of the disease.

During my term of service in Bellevue Hospital, for the months of June and July, six cases were observed, and the seventh is at present in the New York Hospital; to the latter case, Dr. John Watson was so kind as to ask my attention. From the history this patient gives of the discoloration, we learn that it has existed for a year, though, during the last three or four months, it has shown itself more generally over the whole body, the scalp being free, and has the dark line on the lips—resembles in appearance the color of a mulatto. This was the case also in a patient of Drs. J. M. Smith and Bulkley, which was reported by Dr. H. D. Bulkley, in the *New York Medical Times* for September, 1855, and entitled “*A Case of Change of Color of the Skin, in a Young Man, from White to that of the Mulatto,*” and the disease, in this instance, had existed for more than a year, but had not been recognized as having any relation to the supra renal capsules. Since my attention was given to this subject, I have learnt the early history of this patient, which will be referred to in another part of this paper. During the second or third day of my attendance at the hospital, a case similar to the first case reported (that of White) was noticed, and though believed to be this form of disease, was not distinctly diagnosed, but from the exact resemblance to Thomas White, who came into the hospital, June 13, I have now not the slightest doubt of the correctness of the opinion formed at that time.

Case 1.—Reported by Dr. Saunders, House-Physician.—Thomas White, æt. 22; laborer; native of Ireland; single; admitted into Bellevue Hospital, Ward No. 10, June 13, 1856; had been a moderate drinker; his mother died of phthisis; the other members of his family were healthy. He had a cough some three years ago, and spat up some blood at that time. His cough left him, and he was not troubled with it much afterwards. The lymphatic glands of the neck became enlarged and suppurated at this time. He lived in part of the city where intermittent fever was prevalent, and says he had it for a very short time before entering the hospital. He never had any chills after admission. When he entered the hospital, his face and neck were of a light sunburnt hue; was very feeble and emaciated, and complained of pain in the right side; no cough or expectoration; pulse, small and weak; the eyes presented a sickly and pearly appearance; the palpebræ conjunctiva were quite anæmic; his bowels were constipated, with a little nausea and vomiting, retching, as he termed it, occurred sometimes. He would

vomit frequently without any evident cause, and was sometimes flighty. There was no epigastric tenderness. A physical examination of the chest was made, when there was a slight pleurisy found on the right side, where he complained of pain; but no evident signs of phthisis. The treatment, after he was relieved of the pleurisy in a few days, was of the tonic order, as quinine, iron, bitter tonics, and good nourishing diet. Dr. Taylor, on seeing him, advanced the opinion, judging from the color of the skin, and other symptoms, that it might be disease of the supra renal capsules, as described by Dr. T. Addison. He seemed to mend under the treatment for a while; and was able to walk about the yard. The color of the skin grew darker, if anything, and he always complained of being weak and languid. Two days before his death, his friends came to visit him, and brought, without permission, two small bottles of brandy, of which he partook quite freely, with marked exhilaration of feelings. After getting sober, he said he felt very weak; I noticed he was heavy and drowsy, and continued in this condition for twenty-four hours; his bowels had not been moved or his bladder emptied, and on introducing the catheter there was no urine found. There was some tenderness over the region of the kidneys. Dry cups were applied, and a purgative enema; he, however, became comatose, and died at 6 P.M., July, 26.

Autopsy, fifteen hours after Death.—Rigor mortis moderate, emaciated. The discoloration of the skin was most marked on the face and neck; there were slightly darker tinges about the axillæ than other parts of the body; on the right side of the abdomen there was a patch of the size of the hand, of a light shade. On opening the thorax and abdomen, the viscera were found occupying their relative positions. There were several old bands of adhesion on each side, uniting the pleura to their respective parietes; at the apex of each lung were old cicatrices, and through each were scattered a few tubercles. The heart was normal in size and thickness; liver, natural in size and color; spleen, the same; large and small intestines, with stomach, healthy to all appearance.

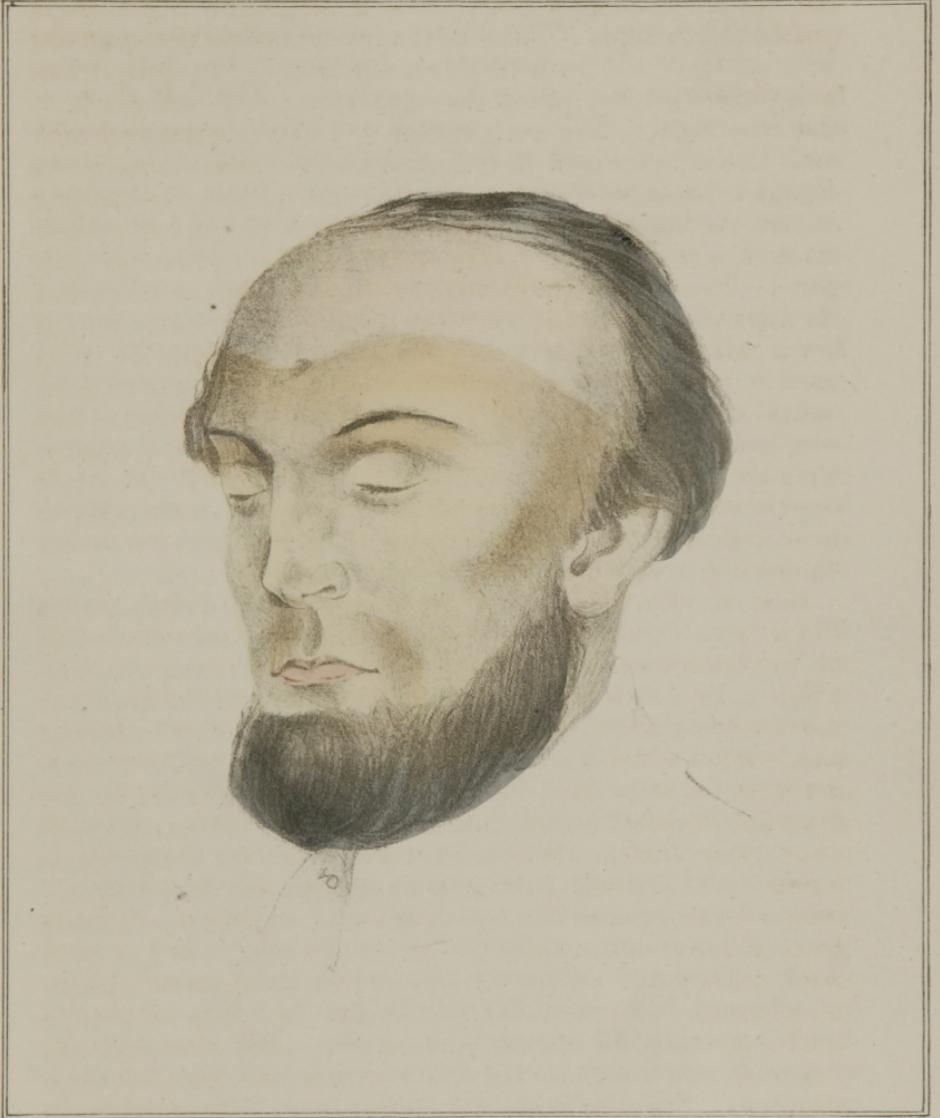
While extracting the left kidney, we noticed some pus emerging near its upper part, and on closer examination, after removing the left kidney, capsule, and the pancreas together, we found it came from the left supra renal capsule. The capsule had in it a deposit, which proved to be, under the microscope, tuberculous matter. The kidney was pale;

cortical substance deficient, and had undergone some fatty degeneration; the right kidney was fatty, the supra renal capsule had undergone a tuberculous degeneration, but was not so much broken down as the left. Weight of left kidney and capsule, $8\frac{1}{4}$ oz.; of the right, $7\frac{1}{2}$ oz.

Remarks.—The appearance of White, as to his physical constitution, presented a tuberculous diathesis; there was some emaciation. The expression of face was dull, listless, and rather stupid; he answered questions slowly, hesitatingly, and would drawl out his words; his mind was feeble. The expression of eye was sickly, earthly; wanting the natural hue and expression. The conjunctiva oculi et palpebræ was pearly, anæmic, and contrasted markedly with the color of his face. The discoloration, when first noticed, was of a light sun-burnt appearance, of a *dirty* shade of yellow, and extended across the centre of the forehead and no higher, being a perfect line of demarkation, to the natural color of the skin. The whole of the scalp was free. The sun-burnt discoloration extended down the temples, along the side of the cheeks on both sides, around the lower portion of the ear, and then to the back of the neck, and engaged the whole neck as low as the half of it. The ears were free, and all the lower part of the scalp. In truth, he was a perfect representation of a man who had been exposed to the sun with his hat on, divested of the cravat, and with collar turned over, and only that part that could be exposed was discolored. The shade and appearance of this color could not be better marked; the posterior part of the neck, and the lateral sides of the cheeks and forehead were the darkest, as though it had been of a longer duration. The spots where the glands of the neck had supplicated, remained free. Every week the appearance of the discoloration became of a more deep and sunburnt character. The upper and lower lips had, when first noticed, several small, darkish red spots; three or four on each lip. These spots were on the outer edge of the lips, and gradually became darker by degrees. They were distinctly evident to a number of the students whose attention was directed to this feature of the case, as aiding in the diagnosis. They appeared very different from the lips in ordinary anæmia or cachetic state, and induced me to feel a stronger conviction in the opinion I entertained of the nature of the disease. The back of the hands also presented the same appearance, which extended to the wrist, the inside was free. There was no albumen in the urine, though

he died in a state of coma, indicating the nervous system was strongly affected. The result of the autopsy verified the diagnosis, and I regret I was prevented from being present at the time. The kidney and the supra renal capsules were given to me for inspection, and they were both found in a state of tuberculous degeneration. The left more so than the right. The left capsule was much larger than natural, being of the size of half a large hen's egg. On cutting through the capsule, there was but a few lines of thickness of the cortical structure, it contained a solid and a semi-fluid mass of a yellow color. The whole medullary structure was gone. The right capsule was not so large, and two-thirds of the capsule consisted of concrete tuberculous matter, the rest being semi-fluid. Under the microscope, nothing was developed but what would appertain to tuberculous degeneration as broken up cells, fatty matter, and granular particles. There was no original trace of the natural organ. The left capsule weighed 4 drachms. The result of the post mortem as to the character of the disease showed the supra renal capsule to be involved in disease, as was anticipated from the tuberculous diathesis which the patient presented.

Case 2.—Reported by Drs. Saunders and Janes, House Physicians. George Comb, æt. 42, laborer, married, native of England, was admitted into Bellevue Hospital, June 24th, 1856. Has had no hereditary disease; never has drunk much; has always been tolerably healthy until six months ago, when he had what he termed "sun-stroke," and after working for some time in the sun, became very weak and dizzy in the head, which caused him to sit down, and then cease from work. When he came into the Hospital, he looked quite anæmic, eyes pearly, tongue pale and broad, in other words, he had the appearance of a patient suffering from albuminuria, considerably advanced. His bowels were constipated; his urine was tested, and a small deposit of albumen was found, the specific gravity 1.010. Skin dry, without perceptible anasarca or ascites. Mild diuretics, ferruginous preparations, and bitter tonics, was the treatment adopted. After being in the wards over two weeks, Dr. Taylor noticed that the lower part of the forehead began to have a sunburnt appearance, and this gradually extended over the whole of his face. There was on the body small spots which resembled very much the appearance of a faded syphilitic eruption, though he protested that he had never had the disease. He gradually grew worse, and after having



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GEORGE COMB.

two convulsions, died in a state of coma, Aug. 4th. Two ounces of urine were removed from his bladder a short time previous to his death; specific gravity 1.010, and albuminous.

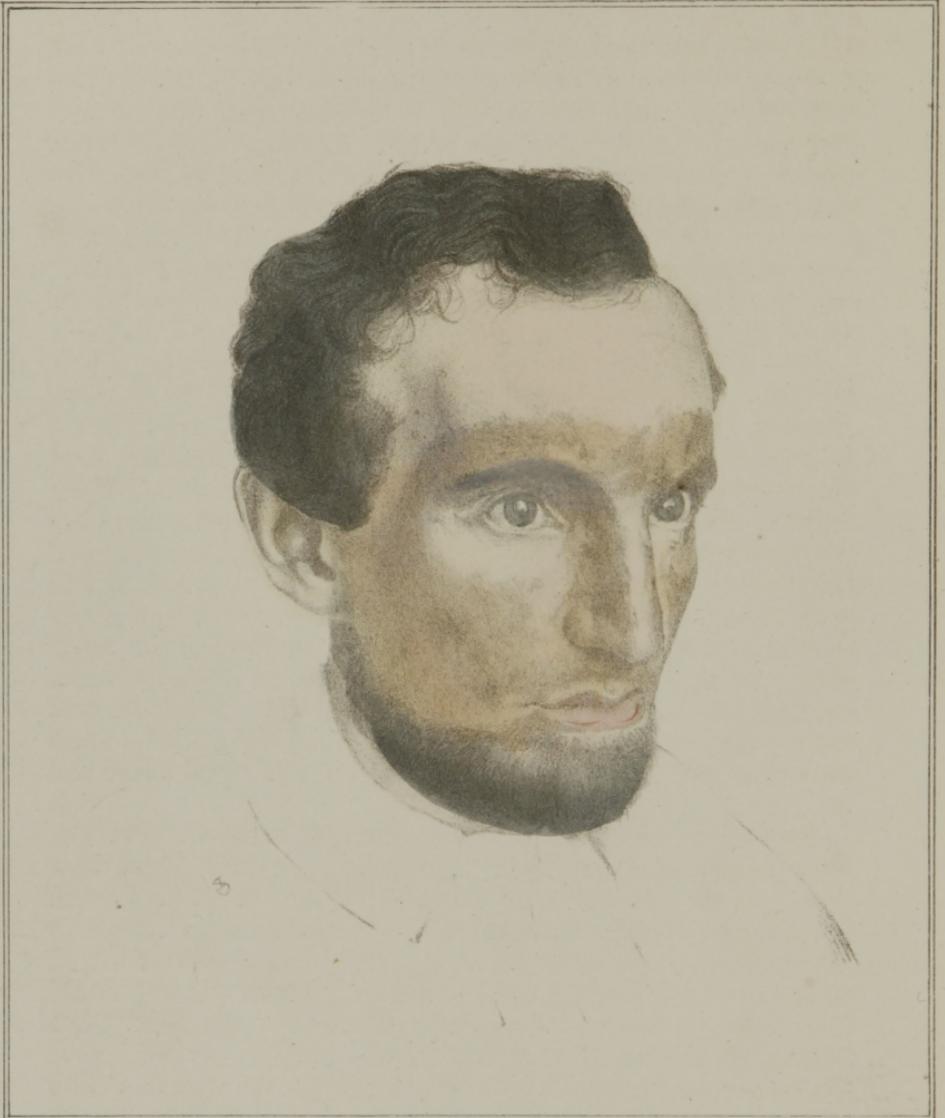
Autopsy ten hours after death.—Weather cool, rigor mortis well marked, much emaciation, color of the face not quite as dark as before death. The upper lobe of the left lung was consolidated by miliary tubercles in the first stage; in the apex of the right lung were cicatrices of old tubercular excavations; heart healthy; liver fatty to some extent; spleen much enlarged, weighing $1\frac{1}{2}$ lb.; kidneys pale and in the last stage of fatty degeneration. The left supra renal capsule was almost completely atrophied, being less than a fourth its natural size, and broken down into a grumous mass; the right was somewhat smaller than natural, had lost its natural color and become a dark chestnut, on cutting it open it was found that the greater part of the organ had become broken down into a grumous semi-fluid mass, leaving only a thin part of healthy tissue.

Remarks.—The case of George Comb is one of the most interesting of this form of disease, having chronic disease of the kidney, when he came into the Hospital, which in the course of a few weeks terminated his existence. The post mortem revealed a fatty degeneration of that organ to the eye and by the microscope. The discoloration of the skin, in Comb's case, commenced between two and three weeks previous to his death, taking its rise on the centre of the forehead, as if he had been exposed to the sun, and was in marked contrast at this early period, to his clear, white, and anæmic skin, particularly so, as he was quite bald. The pigment gradually extended itself from the forehead, on both sides of the face, down the cheeks to the side of the neck, avoiding the ears, to the posterior part of the neck. The lips at the juncture of the mucous membrane and the skin, began also to exhibit the light reddish line. Nothing could be more plain than the commencement, and the progress of the discoloration, pursuing to all appearance, as symmetrical a course almost as that of erysipelas, differing from that disease in its externally manifesting its appearance, as though the pigment was there, and only required to be eliminated by the action of the atmosphere, to become more distinct and positive in its characteristic features of tint. In three weeks it had become like a perfect recent sunburnt color, showing the rapidity with which it may manifest itself, its extent and locality. After death it faded in its color so much

that in twenty-four hours, when I saw the body a second time before its interment, there was left but a light dirty yellowish, though quite characteristic, discoloration. The spots that were noticed on various parts of the body, but more especially on the back, were of a darkish yellow, and looked like one of the forms of psoriasis, though it had no furfurous character. From the investigation of the urine, with its light specific gravity, and the slight proportion of albumen, it was not expected that he would survive long, and the kidney affection was the chief, if not sole, cause of his death. But it was exceedingly gratifying to perceive the pigment manifest itself, thus rendering strong the probability that the supra renal capsules were beginning to be involved in disease which would hasten on his dissolution. This opinion was corroborated by the autopsy.

Under the microscope nothing definite was discovered to throw further light on the subject, although corpuscles, irregular cells, small portions of anaphous matter, and some oil granules were also found, and there was but a trace of healthy tissue left, while the whole of the medullary structure was gone.

These are the only two cases I have as yet been enabled to verify the diagnosis of the nature of the disease by post mortem examinations, and I think they bear additional testimony in corroborating the opinion of Dr. Addison, and showing the relation of the discoloration of the skin to the disease of the capsules. By a further illustration of the subject, especially in reference to the pigment deposited, I would wish to add a short history of two of the other cases which are still in the Hospital. Colored lithographic plates of these two patients have been drawn from ambrotype likenesses, for the purpose of showing the sunburnt appearance of the skin, and the line of demarkation, in the early stage particularly in the case of Bishop, which did not exist when his likeness was taken more than five weeks since, and in Comb after death. The remaining patient in the hospital is too enfeebled to have his likeness taken, and from his appearance, his life will not be of long duration. Being of a chronic nature, the pigment in this case, corresponds with the man in the New York Hospital, in which patient the discoloration pervades the whole body, with the exception of the scalp, and also shows the line of demarkation. In these two patients the color of the skin corresponds with the first case of Dr. Addison, resembling the skin of a mulatto. Had



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PETER BISHOP.

I supposed that so many cases, numbering seven, would have been met with, (and including the patient of Drs. Bulkley and Smith, which I think we might correctly do, from the very early history I have of it, from his uncle, after his nephew returned from the country, and his description corresponding so perfectly with the cases of my own, in all respects, that when related before several of the medical staff of the Hospital, it was apparent, that it was the same disease fully advanced, the number would amount to eight.)— I would have had the first case lithographed, and the appearance of the post mortem changes in the capsules, also represented, though I think it would have availed little, as the capsules in both cases, were so destroyed.

Case 3.—Reported by Dr. Janes, House Physician. Peter Bishop; barkeeper; Irishman; æt. 28. Admitted to Ward No 3 of Bellevue Hospital, July 1, with lead paralysis of the wrists and hands; says he has always been healthy, with the exception of the paralysis, from which he has suffered before, and been cured. In both instances it was caused by drinking beer drawn through lead pipes. About the middle of June, he first noticed that his face began to change color, as if it had been tanned by the sun; it has gradually been growing darker and darker, up to the present time. The discoloration began about the middle of the forehead, and extended over the whole face, except a circle of half an inch around the eyes, which remains of a natural color. The patient eats, drinks, and sleeps well; he says he feels perfectly well except his paralysis; he is not emaciated.

Remarks.—The colored lithographic plate which represents Bishop, gives a beautiful description of the sunburnt hue of skin, and shows the line of demarkation on the forehead, and the lips and which is so peculiarly manifest also in the case of Comb, and was marked in all the others. The pigment, in the patient Bishop has not yet extended to the neck, but it is beginning to be perceptible, and doubtless will become so before many weeks have elapsed. The color on the lips is very marked, at times more so than in some of the others, it is about two lines in breadth, and when the lips are expanded, appears distinct; there is no discoloration on the body; and there would be nothing to call attention to his condition of health, but this sunburnt appearance of the face, as he feels well, except his paralysis. It is a case, I think, of much interest in tracing the development of the disease, and as showing how serious and fatal a disease may

exist, judging from the result of eighteen post mortem examinations, and not be recognized till it is far advanced. But I fear that when we realize the result of these other cases, that the stamp of fatality is impressed upon them even at this early stage of the disease. How important, therefore, is it that in the investigation of disease, the early features of it should be recognized? If not important to the patient himself, that an intimation of his disease be imparted, it may be especially so that his family be apprized of the fatality, in all probability, of his disease.

Case 4.—Reported by Dr. Saunders, House-Physician.—Ezra Bonnel, aged 55; native of New Jersey; boilermaker; married for fifteen years; has been a temperate man for fifteen years, previous to that was a hard drinker. His mother committed suicide; father died in his seventy-third year. At twenty-one, he had yellow fever, and soon after bilious remittent. After recovering from that disease, he remained well until nine years ago, when he had a cold on the lungs, probably pleurisy, which confined him to the house three months. Three years ago he had rheumatism in the left arm and leg, but was not confined to the bed with it. About two years since, had a return of the rheumatism and was kept from work by it for a year. On the 7th January last, he slipped and fell on the ice and broke his left arm, and was treated in this Hospital. He has been feeble since that time, and has done no work since he left the hospital. He re-entered the hospital, July 25, complaining of pain in the side and debility.

Remarks.—Ezra Bonnel, from whom a colored lithograph was made, from an ambrotype, appeared, when first seen, much enfeebled and emaciated; he converses slowly, hesitatingly; utters his words in a drawling manner; appears of feeble intellect, and action of mind. He appeared very differently when in the hospital before. The aspect of countenance, and expression of eye, are sickly; there is great want of natural liveliness; conjunctiva pearly, or deadly white, which appear in singular contrast to the discoloration of the skin, and which he did not know existed till his attention was called to it. He makes no complaint of any disturbance of the stomach; bowels regular. He looks as though he would die with exhaustion, without any evidence of serious disease existing; has the same general appearance of physical constitution as White; retains his seat by his bed nearly all the time, for his inability to walk much, though he goes out occa-



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EZRA BONNELL.

sionally; is listless and feeble. We have here the same dark sunburnt appearance of the skin, occupying the same locality on the face, though the line of demarkation, instead of being distinct and even, rather shades off; the whole of the scalp and ears are perfectly free, and of the natural color. The spots on the lips also have the dark brownish color on them, and have become dark since he has been in the hospital. The hands, on the back part, are of the same color. In fact, he is a "counterfeit presentment" of Thomas White.

The 6th patient, in Ward 12, is a German, very much enfeebled, of whom mention has been made, has been an invalid for a number of months, and is in a debilitated state.

From the number of cases here given of the discoloration of the skin, and with two post mortem examinations, which proved them to be connected with the supra renal capsules, and the rest having all the general features of the two cases of that disease, I think it will be perceived, that they differ from the lithographic representations as given by Dr. Addison. This difference is still more apparent, when we consider that we had the opportunity of observing the pigment deposit itself in the patient Comb, whilst under treatment for renal disease, and of noticing the election of its seat to commence on the forehead, with a clear and distinctly marked line, and on the lips; and in the case of Bishop, which has only existed five weeks, and noticed by him one week before he came into the hospital; and that of White, for two or three months previous to his admission; and next, in that of Bonnel, and all these patients presenting the same sunburnt appearance, commencing from a light shade of tanning and progressing to a darker hue, and which are beautifully illustrated in the portraits of Bishop, Bonnel, and Comb. The discoloration of the skin could not have occurred from the effects of the sun in the case of White, as he had not been exposed to the sun for the last three or four months, and had not noticed the change of his skin till his attention was called to it; and from the length of time he was in the hospital, if that had been the cause, it should have become paler. And again, in the case of Comb, we were enabled to justify the opinion entertained that the discoloration pointed to both capsules as the seat of the disease—for in all the kidney affections I have seen, I never noticed this coloration of the skin before, showing they had become involved before death. In the representations of Dr. Addison, there is no line of separation visible on the forehead,

but in his cases, the pigment embraces the whole of the scalp and ears. This was not the case in the patient at the New York Hospital, for we had the line of demarkation very evident, and also the pigment on the lips, although the whole body is tinged of a mulatto color. The general history of the cases correspond with those of Dr. Addison, except the appearance of the skin, and the emaciated condition of all the patients, except Bishop. The emaciation is not as great as is noticed in phthisis, though it is very distinct. Dr. Addison's plates represent a dirty brown or mulatto or West Indian color, and all his cases have the scalp tinged except case 9, which appears to have been free or not continued to the face by the lithographer as the whole face is not lithographed.

Dr. Jonathan Hutchinson, in his series of cases published in the *Medical Times and Gazette*, for December 1855 and 1856, has appropriated the term "bronze" to the discoloration, which, as he conceives, "conveys a good idea of the exact character of the appearance of the skin in the disease. He compares it "to the color of a bronzed statue from which the gloss has been rubbed off." This, it appears to my mind, and many of my professional friends who have seen them, as inapplicable to the cases I have reported; and I think it would have a tendency also to cause the disease to be overlooked in its early stage, if that appearance of skin was sought for and expected to be found as diagnostic of the disease in its early stage. From the cases reported by Dr. Addison and others, and my own, it will be remarked that this affection may spring up whilst another disease is progressing; and that it may, and generally does exist as a disease by itself; that the disease, judging from the number of cases that have come under my observation in the course of two months' service in the hospital, cannot be very rare; that it must have existed in many cases which have never been recognized; that the discoloration may take place in rather a rapid manner, when the disease may be of an acute character, and that the discoloration may be gradual in its appearance, and become extensive when the disease is of a chronic nature, and exist for, it may be, years, owing to the peculiar diathesis of the patient, whether of the tuberculous or cancerous or fibrous, as nearly allied to the rheumatic; that it requires a longer time for the development of the pigment when it becomes of the mulatto or West Indian hue, and more universal, while in the early stage it is like a person who is sunburnt, and further, that the result of all the cases have pro-

ceeded to a fatal issue, though there is one case reported by Dr. Peacock, in which it is stated by the clerk who made the post mortem, that the supra renal capsules were healthy (this statement, I find, according to Dr. Hutchinson, in the *Medical Times and Gazette*, May, 1856, page 519, was not correct, and that the organs alluded to were not examined), so there is, therefore, no instance, thus far, in all the cases that have been recorded, amounting with my own to thirty-seven, and in which there were eighteen post mortem examinations; that in all these eighteen cases, fourteen of which both the supra renal capsules were diseased, and in four only one of the capsules was diseased; and there has been no case recorded, where this morbid change occurred, and the discoloration of the skin existed, of a recovery; and not a single case has been noticed where these bodies were diseased and the discoloration did not exist also.

Respecting the diagnosis of the discoloration of the skin in this affection, there might be some difficulty in arriving at a correct decision in the instances of persons who have been sunburnt. But in cases of this nature, the ears and the hair have undergone some change—which does not, in this disease, exist, in its early stages—as we have seen in all the instances I have recorded, and as many medical gentlemen have also observed, where the sunburnt appearance from nature exists. The general health is good, and the nervous system not impaired; the lips free from the pigment which all of the patients in this affection have. In the case of Bonnel, who appears at present to enjoy tolerably good health, even at this early stage, the pigment of the lips is clearly marked, when stretched distinctly so. If the pigment on the face does not extend, or grow much darker, though otherwise having the characteristic marks, it is possible that only one of the capsules may be affected, and thus it may remain in this form for a great length of time, and the disease may be prolonged even to two or more years.

In pityriasis versicolor the patches are smaller, not as diffused, show themselves on the breast, shoulders, partly on the neck, and existing sometimes slightly on the face—not unlike the freckles or discoloration in females during gestation—itches at times, and has also, sometimes, a slight, furfurous scale; and, lastly, the presence of a microscopic fungus, similar in structure to the parasite of *tenia favosa*, and to other mycodermatous growths, which discovery has been made by Eichstadt, and where this is sought for and found

no doubt could exist; the history of the case must here be taken into consideration. Another source of difficulty might seem to be the dirty, sallow appearance of the skin in miasmatic, and in the various forms of malignant cachetic, disease, but to the early stage there can be no comparison; and in the advanced stage, the color is so marked that it would not admit of error.

The microscopic examination of the skin, by Prof. J. C. Dalton, jr., in the case of Drs. Bulkley and Smith's patient, showed the coloring matter found to be deposited in a granular form, and could not be distinguished from a mulatto, and it is believed that it is recognized that the color in the mulatto is dependent upon a special arrangement in the organization of a certain tissue of the skin; that pigment cells of a dark color is secreted in the form of fine granular matter, instead of being uniformly diffused through the tissues.

Respecting the anatomy of these organs, we know that different opinions have been entertained regarding their structure and the relation they bear to other organs and their physiological action.

In their structure they approach nearest to the blood vascular glands; they are composed of two different substances, cortical and medullary; the form is compact, and is of fibrous aspect, and tears readily; its color, of a whitish yellow, or yellow in the innermost third, passing into a brownish yellow, or brown, so that when a transverse section is made, two layers may be distinguished an external, bright-colored layer, and an internal, narrow, dark border. The medullary substance is of a grayish white with a tinge of red, although when its veins are full of blood it may assume a darker and more venous hue. Its consistence is softer than the cortical, though not so much so as is generally believed. In the dead subject, the cortical substance readily becomes detached from the medullary, when the supra renal gland presents a cavity, according to Kölliker, occupying the entire organ and containing a dirty pultaceous substance, derived from the half disintegrated brown layer of the cortex, mixed with blood, together with the less altered medullary substance, and which, however, in more rare instances, also becomes broken up. If this is the appearance of the result of death, as described by Kölliker, it will appear difficult to recognize whether in some instances it results from disease in the organ in its acute form or early stage. It has, however, been shown by Dr. Wilks, of London, that in persons who have been killed by accident

the central medullary portion has nearly a grayish white color, and on those who have been the subjects of cardiac or pulmonary obstruction, or in those long dead, the centre has been generally red and soft. This, however, is not sufficient to account for the different appearance met with, and it still remains to be decided, whether this be due to disease, age, or post mortem changes.

Some anatomists have supposed they had no excretory ducts, while others, such as Bartholin, Vauquelin, Peyer, etc., believed they had, and accordingly they communicated with the testicles and ovaries; with the thoracic canal, by Kulmus; with the pelvis of the kidney, by Heuerman and Bendt. Cassan and others have asserted that the supra renal capsules were larger in the Negro than the Caucasian race, and their medullary substance darker; and Meckel has found this to be the case in the negress but not in the negro. Those who admit an excretory duct to the genital organs, necessarily connect the renal capsules directly with them, and Meckel has observed their simultaneous and considerable development in several orders of mammalia, and this has suggested the same idea to himself, but he was unable to describe the mode in which the supra renal capsules and the general organs coöperated.

Vauquelin has found the capsules ossified in a cat from whom the ovaries had been extirpated. Lobstein, that of the left capsule triple the size, by a chalky mass, in a man who had long been affected with syphilis; and in two individuals, according to Meckel, who were addicted to venery, they were unusually large; and in a deformed female, after parturition, in whom the uterus and ovaries were atrophied, they were also atrophied. Otto has seen them twice the usual size in one case, where the ovaries were much developed. Treviranus considers them as imperfect rudiments of the genital organs. Sometimes there is but one capsule, and sometimes they increase in number and resemble the spleen in this respect; but it is believed to be difficult to determine whether this state be only a simple division, or as a real increase of the capsule. Rokitansky has observed that accessory supra renal capsules, indicating an apparent excess of development, are of frequent occurrence, and several flattened accessory capsules are then found on the renal and solar plexus, and on the ganglion of the latter nerve, varying in size from a millet to a hemp seed.

In the morbid anatomy of the cases reported by Dr. Addi-

son and the series of Mr. Hutchinson, and in the two cases published since in the *Med. Times and Gazette*, for June, 1856, and the two cases of my own, it will be observed that these bodies undergo the same process of disease from an inflammatory action through its regular changes, suppuration and induration, and also through the various organic changes incident to lymphatic glands, and glands of this nature, such as tubercle, cancer, cystic degeneration, and, as supposed by one or two authors lately, having a form of degeneration peculiar to the gland itself. But from the evidence before us of eighteen post mortem cases, there have been more of the tuberculous degeneration than any other, and as a general rule I am inclined to believe that if not of an acute nature, this result will characterize most frequently that form of degeneration, as this form of cachexia prevails more extensively than any other, except the cancerous, for the history, progress, and termination of the disease, shows a cachectic condition, and not anæmic, as described by Dr. Addison. On account of their vascularity, hæmorrhage not unfrequently occurs. But it is rare to see a case in the inflammatory state, according to Rokitsansky, as, in consequence of inflammation, they become adherent to the kidneys. It is also rare to find a congenital union of the kidneys and capsules, and in that instance the same tunica albuginea invests the two, and they are united by only a cellular tissue.

It is very evident, from the results of investigation of the cases brought before the medical profession, that these small bodies, when diseased, play an important part in the economy of man, undermining the constitution and hastening on to dissolution; and as we perceive, where both of the organs are involved, no treatment has been of any avail, for when the visible and prominent coloration of the skin presents itself, an unfavorable issue would seem to be indicated.

At the present day the function of these organs is not recognized, nor has any light been thrown on their physiology, although Kölliker has given more attention to them than any of the prominent physiologists of the present time. The conclusion to which he has arrived, is that in view of the absence of all physiological indications, and so long as the course of the nerves in them is not more accurately known, only very general deductions can be offered. But he considers "The *cortical* and *medullary* substance as *physiologically distinct*." The former may provisionally be placed

with the so termed "blood vascular organs," and a relation to secretion assigned to it; while the latter, the medullary, on account of its extremely abundant supply of nerves, must be regarded as an apparatus appertaining to the nervous system, in which the cellular elements and the nervous plexus either exert the same reciprocal action as they do in the gray substance, or stand in a relation as yet wholly unascertained towards each other. Leydig joins with Bergman in believing that these capsules are closely related to the nervous system and that these organs bear the same relation to the ganglia of the sympathetic nerves, as the pituitary body bears to the brain.

In connection with the present subject of the pigment which we notice existing on the skin of patients laboring under disease of these capsules, and the great impression made on the nervous system, as we perceive through the marked impairment of the physical constitution, the weakness and feebleness of the powers of the body, the general lassitude that exists, the feeble and slow action of the mind, the stupid manner and expression of thought, the unearthly and sickly aspect of the eye, the method of death, either by exhaustion, as in cases of advanced anæmia, or through the cerebro-spinal axis, or by coma, we are disposed to entertain the belief or opinion, that if the suggestion of Prof. Kölliker be true "that the cortical and medullary substances are physiologically distinct," it may, or will, in the course of time cast much light on the subject, and aid in solving the principal feature of the case, why and how this pigment is deposited, and its relation to the supra renal capsules. Now, if, as we perceive, in this disease, the nervous system is so much involved, the body and mind both impaired and depressed, when the affection has existed for a few months, and the medullary substance is considered as being nearly allied in its function and relation to the nervous tissue, I would suggest this part as being physiologically distinct from the cortical, and to be the "*fons et origo*," of this depressed and impaired state of the nervous system. On the other hand, as the cortical substance is believed to belong to the "blood vascular organs," may this not be the "*fons et origo*" of the pigment we see so distinctly evident on the skin? It seems to give color to the appearance of a tendency to an elucidation of the difficulties involved in the relation the discoloration bears to the disease of the supra renal capsules. But we leave this point for further investigation,

though the idea may be entertained, as the physiology of the organs is considered not yet determined, and its function, according to the latest authority on the subject, unknown. From the facts, therefore, lately presented to our attention by Dr. Addison, and which have in so many instances thus far been verified, that there appears to be a relation or connection between the discoloration of the skin and the capsules the thought presents itself to my mind, whether it may not be possible that a still further application of the subject in the discoloration of the skin, which we see in gestation, on the face, hands, around the nipple, the abdominal line, navel, vulva, etc., etc., may not have some connection with these bodies, though of a temporary nature; I think the suggestion has some bearing, when we come to reflect on the connection or relation pregnancy has with the kidneys, producing in them a temporary congestion, and to such an extent that albumen may be deposited in the urine, and produce convulsions as is sometimes the case. Now this temporary congestion of the kidney, during gestation, may exist as early as the first week, and therefore proceed not from mechanical pressure on the principal arterial and venous vessels as is generally supposed. An instance of this nature has lately come under my observation, where the skin had continued to be deprived of its natural function for two months, and albumen was discovered to exist, though the lady was only advanced two months and one week, and while under treatment in the course of two weeks, ceased to exist and still continues free from it. If, therefore, when the kidneys become congested during gestation, even in its very early stage, may it not be possible, from the contiguity of the supra renal capsules, they may become involved or may they not themselves become slightly affected, as we perceive other organs do in this state, sufficiently so to allow the discoloration, incident to pregnancy, to exhibit itself? It seems to me there is a feasibility in the suggestion that may admit of further illustration from the remarks we have made; and from the investigations of Meckel on the mammalia, and his observations on the human subject, and the case of Otto and others, shewing the relation they both bear to the genital and uterine organs; the case of Comb, where it occurred during renal disease; but the further, and as I conceive, the more valuable, suggestions of Kolliker, respecting the physiological action of the two portions of these bodies being distinct, and which we are disposed to think may in future

tend much to explain the reason how this pigment is deposited, and its connection to the supra renal capsules. Now if this should prove to be the reason why this discoloration exists, and in gestation also, may it not explain the reason why the nervous system is affected when albumen is discovered in the urine, and that instead, as some have believed, and which I have not yet been disposed to be fully convinced of, that, instead of urea being the cause of the convulsions, it may be possible that the medullary part of the supra renal capsule is involved.

My object in publishing the cases which have so recently come under my notice, of the disease of the supra renal capsule, is to aid in the dissemination of facts that bear so evidently on the early stage of the disease, the sunburnt appearance of the skin, and which has been so faithfully and correctly depicted by Dr. Addison, as I think, in the advanced stages, and to whom the profession are so much indebted for the very valuable monograph he has presented them on the subject, and in which he asks for all the facts that may have a tendency to corroborate his views, or that may tend to contradict them. It was not my intention to have occupied so much time and space, but if there is but one fact which has advanced the elucidation of the subject, my object will have been obtained. The subject requires close and patient investigation, aided by morbid anatomy, through microscopic investigation and physiological induction.

