

1862

A + B

Brodie &

Brown

Awanting

Jaundice

Corresponding to the three primary natural colors of the human race - white - yellow and black - are three produced by disease, termed Leucopathia - Xanthosma and Melasma - : in both, varieties are produced by combinations - But we may have changes in color independent of disease - by drugs, as nitrate of silver - ; by the mechanical deposit of pigment, as in tattooing - or by residence in tropical climates -

Jaundice is an example of pigmentary change due to disease - and by this term we mean, "that combination of symptoms indicating some functional or organic lesion of the liver, and characterised by a yellow color of the skin and conjunctivae arising from the presence of bile pigment in the blood & tissues."

Of the several elements entering into the composition of the bile, and for which we possess accurate tests - none can be detected in the blood or urine, either - of persons suffering from Jaundice, or of animals into whose blood bile had been injected in considerable quantity.

The blood apparently possesses the power of transforming them into pigment immediately on their becoming mingled with it.

The result of the experiments, and chemical examinations of numerous physiologists { Chevreul - Desjoux, Gmelin, Lecann - Frerichs - Valentin, &c } with the view of detecting bilinary acids in the blood has always been negative. The following are the conclusions of Frerichs - the latest investigator of this subject.

- a. After the injection into the blood-vessels of large quantities of bile, deprived of its coloring matter, pigment is in most cases excreted along with the urine, which exhibits most of the characteristics of bile-pigment.
- b. In rare cases instead of the coloring-matter, we find chromogen substances, which are not transformed into coloring matter until the evaporation of the urine upon exposure to the air.
- c. Unchanged bilinary acids are not found along with the coloring matter, but leucine is usually present - Taurine and glycine cannot be detected with certainty.
- d. The injection of bile is, in some cases, not followed either by the excretion of coloring matter with the urine, or by the appearance of large quantities of unchanged bile - The causes of this anomaly are unknown -
- e. The injection of bile into the blood of living

animals is followed by no important derangement in the vital functions -

He further adds - Though we have, hitherto, been unable to trace in detail wherein consists the change in the absorbed bile - the occurrence of which we are thus obliged to admit - yet this much is certain, they give rise to color-producing substances, which under the action of the carbonic acid of respiration are transformed into bile pigment; this is confirmed by the quantity of the coloring matter, which bears no relation to the quantity of bile formed daily - by the injection of biliary acids into the blood, and by the examination of the blood of jaundiced persons.

Numerous statements have been advanced as contradictory of the conclusions just given - Thus Orfila, de Martigny and Clarion state that they have found the resinous constituents of bile in the blood; but, their examinations were made at a time when, from the imperfect nature of the chemical tests employed - it was impossible to distinguish between the resin of bile and other similar substances - again Lehmann states that he has found biliary acids in small quantity - in the blood, urine, and exudations, but his observations were not made on jaundiced persons,

but other diseases in which the liver was not involved;

The display of colors yielded by bile may occasionally be obtained in serous and inflammatory exudations - But the most direct contradiction to Frerichs' views, and facts on which they are founded was given by Dr. Kühne, who obtained directly opposite results on a repetition of Frerichs' experiments; viz -

1. In Jaundice resulting from closure of the common duct, the urine always contains biliary acid, as well as bile-pigment.
2. The presence of biliary acids is a peculiarity of jaundiced urine: They are never present in normal urine.
3. The biliary acids are not decomposed by the blood - they are excreted unchanged by the kidneys.
4. The biliary acids are passed off (by) with the faeces - and are not reabsorbed by the intestines.
5. Dogs into whose veins colorless bile-acids is injected die suddenly in a short time.
6. On the injection of colorless biliary acids into the veins - bile-pigment may appear in the urine, but this is due to the property possessed by these acids of dissolving the blood corpuscles, thus setting free a quantity of haematin, which, being acted on by the biliary acids, or their salts, is converted into bile pigment.

In support of this last view he appeals to the circumstance of albuminuria or haematuria having been usually observed after the injection of biliary acids.

It may be stated that, while the results of Kühne's experiments remain unconfirmed by other observers, several have arrived at the same results as Frerichs.

Regarding Jaundice as a symptom of deranged hepatic function, its causes must be numerous depending, as it does, on various conditions and widely different diseases of the liver, which looked on as the true object of diagnosis, the real nature of a given case of Jaundice is often involved in great obscurity, and its diagnosis perhaps impossible.

The outward manifestation of Jaundice - i.e. the color change - is preceded or accompanied by several symptoms which may now be briefly referred to -

The Jaundiced color of the skin proceeds principally from the deeper layers of the epidermis, the rounded cells of which are intensely colored, the older flat cells are of a paler tinge. Hence it is that the coloring of the skin may continue for a long time - until the epidermis is removed by desquamation - after the {Jaundice} cause of the Jaundice has been removed.

10

The 'Degree of Color' varies with the tissues, age, and suddenness of attack. In Jaundice produced by sudden closure of the common duct the liver is the most deeply tinged, but not so in those forms in which no structural lesion of the liver can be detected (Budd). In young plump persons the tint is bright yellow, while in the wrinkled skin of thin old age, chronic Jaundice may be dark green -

Along with these pigmentary changes there are others produced by the poisonous action of the bile on the nervous system - 1. Derangement of general sensation, - great exhaustion and debility, head-ache and giddiness - sadness and peevishness - 2. Itching of the skin; this may be either partial or general. Though not uniformly present it usually increases with the intensity of the Jaundice - Dr. Graves mentions a case { given at p: 33. } in which the itchiness preceded the Jaundice - ceasing on its outbreak. - 3. Skin Diseases - pimples or pustules. A case is given by Dr. Frerichs in which the skin was covered with numerous "wheals" - about the size of a shilling, and which disappeared eight days after their first appearance. Dr. Graves met with several examples of "Urticaria" in Arthritic Jaundiced persons - 4. Retarded heart's action. The pulse in Jaundice is very variable,

falling as low as 40 per minute - and occasionally lower still: Frerichs gives two cases, in one of which it was 28, and the other only 21 per minute. The falling of the pulse is well marked in some cases of fever in which Jaundice supervenes. when it falls from 110 to 70 or 80 per minute. 5. The temperature of the body, is unchanged in simple Jaundice but if fever be present may ^{rise} 3° $\{i.e. to 102^{\circ} or 101^{\circ}\}$. 6. The most common accompaniment is deranged digestion, which is frequently persistent and well marked -

7. There are certain derangements of the special senses which are worthy of note - a. A bitter taste in the mouth though the tongue be clean - is probably due to a poisoned state of the blood - b. The most peculiar state found in conjunction with Jaundice is yellow vision, it is perhaps the least frequent, being observed in only 5 in 1000 cases by J. P. Frank. it is, however, much more frequently present in all probability, because it is, in many of the cases in which it was observed, of very short duration: while in others it may remain for days - This yellow vision, or "Xanthopsia", is now considered to be caused by a morbid action of the nervous system, rather than from a jaundiced color of the fluids and membranes of the eye.

Dr. Graves thus explains the absence of yellow vision in so many cases by the following considerations.

1. That the humors of the eye generally escape being colored, because he has occasionally seen the gall bladder contain a beautiful limpid fluid - 2. That the fluids may be colored gradually, and the patient does not observe the transition - 3. That the want of the power of comparison prevents the patient seeing objects really yellow.

4. The pigment is eliminated by most of the excretories - the kidneys more especially and in all cases - the sweat glands occasionally - a most striking case of this is given by Dr. Cheyne. [Dublin Hospital Reports] in which the general indisposition was so very slight that the patient (a lady) did not intend calling in a doctor till she saw her linens stained - she satisfied the doctor by wiping her face in his presence when the Cambric handkerchief was colored - The milk in the female breast has in some very rare instances been colored with bile - Dr. Bright and Sir H. Marsh have observed such cases - Dr. Marsh's case is thus stated [Dublin Hosp: Reports: 1822]: "Bile, mixed with a substance resembling curd, flowed in considerable quantities from the lactiferous ducts; the mammae appeared full

and by a very moderate pressure there were obtained several ounces of a tenacious yellow substance bearing all the visible characters of pure bile". Dr. Bright's case differed in so far that the woman was nursing a child during the attack —

A state characterised by such marked symptoms would naturally attract attention — accordingly from a very early date notice is taken of Jaundice, and under the titles *Icterus - surigo - morbus regius - or morbus arquatus* - we find an accumulation of materials not to be surpassed by many single symptoms.

From the days of Hippocrates till the sixteenth century an excessive secretion, as well as a bad quality of bile was considered a most fruitful source of disease - Paracelsus and Van Helmont passing over to the other extreme rejected almost all the pathogenic properties of bile - the former believing it to be nothing more than a useless refuse, and the latter maintaining that it was impossible for such an excellent fluid to produce disease - Both these theories were as unpopular as they were short lived - Sylvius adopted the old theory, believing that bile was not such an excellent fluid as to be incapable of producing - not only disease - but even

death, and proved by chemical research that it was not only not useless, but performs most important functions - These views of Sylvius remain more or less modified, and his ideas of the production of Jaundice were so far conclusive, that, to the present time a hindrance to the excretion of bile is recognised as one cause of an excess of bile in the blood -

There next arose a question as to the probability of a suppression of bile being a cause of Jaundice -

Those who, like Glisson - Morgagni - Boerhaave and Van Swieten - held this theory, looked on the liver as an organ for filtering the bile from the blood, and that any interruption to this function caused Jaundice - This doctrine gave origin to great discussion, but it gradually became abandoned till its revival in the present century, by Darwin - Budd and others in this country.

Though Jaundice may be caused by any disease of the liver - yet we have here an illustration of the medical truth - that similar causes are not followed in all cases by similar results - for we find that a certain condition of the liver may cause Jaundice at one time and not at another.

Having said so much introductory I now proceed to a consideration of some of the causes of Jaundice with the effects produced — The very numerous causes of Jaundice may be comprehended under the heads —

I. Jaundice depending on Retention of bile

II. Jaundice depending on a condition in which no organic change can be found.


Before taking up the first head I would mention some of the causes on which old authors supposed Jaundice depended — ... That it was due to an infiltration of the tissues by bile rendered fluid by the action of poisons — marsh miasm. &c —

(2). That Jaundice depended on a Spasmodic contraction of the skin and an obstruction to the circulation of the blood through it.

(3). That the yellow coloring matter is formed in the skin without the participation of the liver —

I. Jaundice due to a Retention of bile in the ducts, and consequently from reabsorption.

Perhaps the cause of a majority of cases of Jaundice may be traced to some obstruction of a merely mechanical kind, as pressure from without, or impaction in

the ducts of gall stones- &c. But it is evident that in the numerous cases in which it is caused by mental emotions - no such purely mechanical explanation will apply. Those who look on Jaundice by Suppression, as admitting of almost universal application ask - How can the bile once secreted again appear in the tissues? This has been answered many years since by the direct experiments of Saunders, who on tying the common bile duct in dogs found the absorbents of the liver very much distended by a fluid of a bilious color - These absorbents could be traced to the  thoracic duct - the contents of which were colored -

Mechanical obstruction to the escape of bile may occur in numerous ways - "by Gall Stones: - This frequent cause of Jaundice, termed by Cullen "Icterus Calculosus" - is characterised by the intense inter-mitting pain accompanying it - and which is referred to the right hypochondrium. Unlike inflammatory pain it is much relieved by pressure, and is, in many cases at least, unattended by fever - the pulse in most being below the normal standard - The passing of a first calculus - for there is great probability that others will follow - causes by far the most pain -

The canal remaining permanently dilated admits the free passage of future concretions - Jaundice caused by passing calculi is of short duration and not likely to be followed by bad results - But should one become permanently impacted in the duct, it may set up inflammation and ulceration and escape into the peritoneal cavity - or by the irritation set up by its passage adhesion may follow and closure of the duct ultimately result.

In such a case there may be permanent Jaundice - which is not incompatible with good health, as certain cases would seem to indicate - Thus,

Drs. Graves & Stokes mention two cases - in one of which the disease lasted Eleven months, and in the other two years before nutrition became impaired: Dr Budd saw a man who remained well nourished during an attack of Jaundice of four years standing:

Dewees one of seven years, and Van Swieten mentions the case of a female who recovered after being Jaundiced eleven years. In these cases it is probable the closure was only partial. Dr. Budd gives a case in which the body was tolerably well nourished for twelve months, tho' he believes there was complete closure all that time: and another - a female - suffering from a

similar obstruction, lived more than eight months in a state of deep Jaundice, and five months after the occurrence of the Jaundice she gave birth to a child, which she was able to suckle up to the time of her death.

The passing of gall-stones, though productive of the most intense pain, is not attended by much immediate danger to life - It is only {productive} fatal when the stone has been long impacted in the common duct, in which fortunately it is least likely to remain permanently - for a calculus that has passed through the Cystic generally passes through the larger and straighter common duct. But there are recorded cases in which, from concretions in the common duct, death has resulted. Death is brought about in various ways, thus Dr. Abercrombie, gives the following as the appearances found after death - Inflammation of the upper part of the duodenum, which was remarkably softened. A large irregular concretion was found in the common duct, and the parts so much softened that it (the calculus) passed through the side of the duct when slightly handled. The textures behind the duodenum were considerably inflamed. It may also cause death by the duct behind the point of obstruction giving way and pouring its contents into the peritoneal cavity - or

a calculus retained in the gall bladder may set up inflammation, and making its way into the abdominal cavity cause a result similar to the previous - The gall-stone having entered the intestinal canal, the patient is at once relieved of all his pain; but the danger does not always end here, for in some very rare instances it has caused death by producing ilius - and like any small hard body it may get lodged in the vermiform appendix, and by inflammation and ulceration rapidly prove fatal - Such results as these, however, are very rare, the greatest inconvenience being colic or tenesmus.

Besides the local mechanical effects already referred to, gall-stones may produce symptoms which readily might be mistaken for other ailments, in many cases these are mainly due to the faulty assimilation in which the calculi originate, but in some to the local irritation. These symptoms are usually very vague - in one partaking of a nervous or hysterical character - in another of disorders of digestion, and in a third the chief complaint is irritation of the kidneys and bladder.

In some the urinary symptoms have been so marked as completely to mask the true nature of the disease -

Dr. Prout referring to such a case ^{says} in "Stomach & Urinary Diseases" - "All the symptoms indicating renal disease to my surprise either left, or ceased to trouble the patient, after a severe attack of Jaundice, accompanied by the passing of gall-stones. In this case ^{an} incipient disease of the kidneys or a great tendency thereto, was excited, or perhaps produced by a remote mechanical irritation. Nor can there be any reason to doubt that, if this exciting cause had not been removed, the disease of the kidneys would have been confirmed"

2. Foreign bodies of a different kind have become impacted in the common duct and given rise to Jaundice - I refer to the seeds of fruit - Small intestinal worms, &c. Several cases in which worms caused Jaundice have been recorded, but it would appear that their presence does not necessarily cause Jaundice - The effects of mere closure of the duct are the same whatever be the cause.

3. Jaundice from the pressure of Tumors on the duct. That growth in the liver which causes Jaundice more frequently than any other is Cancer - The liver is more frequently the seat of this most fatal disease than any internal organ - , it may be the

primary source and only part affected - but more generally the cancer of the liver is secondary to ~~some~~ a similar disease in some other part - as mamma.

The Jaundice depending on cancer is more fatal - and permanent than that arising from the passage of Calculi. But Jaundice is not necessarily an accompaniment of Cancer. Dr. Budd says - "The presence or absence of Jaundice seems to depend, not so much on the number and size of the ~~concretions~~ cancerous tumors and on their rate of growth - as on their being so situated as to compress some of the ducts - The liver may be tripled in size and no Jaundice, but on the other hand there may be deep Jaundice, and no appreciable enlargement of the ~~stomach~~ liver, and without any pain or tenderness" - Dr. Ferriehs says - "That the Jaundice is greater in those cases in which the tumor is situated in the posterior surface of the liver, and may be wanting when a like lesion is seated in the convex surface" -

It would appear, however, that "melanotic Cancer", which assumes a "miliary" character, causes Jaundice by the destruction of hepatic cells rather than by its pressure on the ducts. When of this (melanotic),

variety the tumors are very numerous - the whole liver being closely studded with black grains giving on sections an appearance, compared by Cruveiller - to granite.

Of the many cases of cancer of the liver given by Dr. Bright { "Abdominal Tumors" } very few were accompanied by Jaundice as an early symptom: when it did occur the disease had come nearly to a fatal issue. As a rule Jaundice either does not occur in this particular form of hepatic disease - or only at a period when its presence diagnostically is of no value -

The "Knotty Tumor" of the liver has many points of resemblance to Cancer. But a much more frequent cause of Jaundice are "Hydatidic - Growths": which resemble cancer in so far as to be most commonly met with in this organ - whence, by a process somewhat similar to Embolism - they form and increase in other organs. If one of them be situated near the surface of the liver it may attain a large size in a short time, though the growth is generally slow - producing so little inconvenience in some cases as not to be suspected during life. The presence of such a

a tumor in the liver subjects the patient to constant danger in two ways — the probability of a similar tumor being formed elsewhere — and the natural tendency of the tumor to discharge its contents by ulceration into either the pleural or peritoneal cavities — The following case illustrates several of the evil results of a hydatidiform growth in the liver —

Judith Austin, aet. 25. Servant, was admitted to the Birmingham Hospital on 24th Feby. 1837. According to her own account, as well as that of her friends, she had enjoyed uninterrupted good health till the previous Christmas, when, without obvious causes, she had a rigor and other febrile symptoms, along with pain in the hepatic region, followed in a few days by Jaundice — She was treated as for inflammation of the liver — recovered — and returned to service; but she had scarcely been a week at work, when she was suddenly seized with a rigor followed by heat of skin and perspiration — next day she was Jaundiced — Three days afterwards she was re-admitted to Hospital — then having rather deep Jaundice — itching of skin, which was dry and of natural temperature — Pulse slightly ac.

-celerated - respiration natural - appetite bad - slight thirst - foul tongue - occasional sickness and headache - bowels much constipated - stools light brown color - urine deep yellow.

She complained of uneasiness in the right hypochondrium, where there was considerable fulness and firm swelling - pain much increased by pressure - The Jaundice daily became fainter under administration of Pil. Hydrargyri et Colocynthis - and had quite disappeared before April 12th. { 16 days after admission } when she died from exhaustion, having rejected all her food for several days

Sectio Cadaveris :— The liver exceedingly enlarged - the left lobe healthy; but the right felt like a large bag of fluid - the contents consisting of more than three pints of a thinish fluid - opaque - deeply colored with bile, and containing per to the amount of about one third - a great number of hydatids of various sizes floated in this fluid - the left lobe was adherent to the diaphragm, and in it an abscess communicating with one of the hepatic veins - In the portions of the liver not destroyed by the tumor were small bright green spots, apparently from the extravasation of bile from inflamed & ulcerated ducts -

Another occasional cause of Jaundice is abscess of the liver, which condition is generally secondary to other affection, at least in {mild} temperate climates, in which its most frequent cause is dysentery, or as a sequel to surgical operations or injuries on the head. Abscess of the liver is not attended by Jaundice in all cases - apparently from their situation and amount of hepatic structure involved. Two bodies each having an abscess in the liver were examined at the same time by Sir Henry Marsh - one was deeply Jaundiced and had an abscess in the right lobe. The other was not Jaundiced and had an abscess in the left lobe of the liver.

The Pancreas a cause of Jaundice:-

No organ in the body is so little apt to take on diseased action as the Pancreas. Occasionally it becomes the seat of cancerous disease, when from enlargement of its head, it presses on the biliary ducts, and thus becomes the cause of stray cases of Jaundice. The following case is illustrative -

Carl Bohle, aet. 55, had enjoyed uninterrupted good health till six months before his admission to Hospital on Novr. 27th. 1854. At this time he complained of sharp pain extending from the region

of the gall bladder towards the epigastrium. Seven weeks before admission he gradually became jaundiced. On admission he was robust - the skin of a brownish yellow - when spoken to he gave slow and surly but rational answers. The liver was slightly enlarged. At the outer margin of the right rectus abdominis muscle, on a level with the umbilicus, was felt a smooth, pear-shaped moveable tumor - extending towards the liver. A week after admission the skin became bronze colored; and the urine passed was scanty and dark-color: rapid emaciation set in with loss of appetite - The mental faculties became impaired and he died on December 10th: ξ 1.5. two weeks after admission - 3.

Post mortem Examination - Dura mater yellow and thickened: the mucous membrane of pharynx and oesophagus was jaundiced - and the endocardium was dark yellow. Fluid giving the reaction of bile-pigment was found in the peritoneal cavity: the liver was slightly enlarged, and the ducts enormously dilated - the ductus choledochus just before entering the duodenum measured one inch and an half transversely - the fluid contained in the ducts was whitish, feebly alkaline, and presented no trace

of the coloring-matter of the bile. The head of the Pancreas was enlarged and occupied by a mass of scirrhous, completely obliterating^{at} the ductus choledochus, and extending into the duodenum in the form of a pendulous tumor. § Frerichs. Vol: I. p. 137 §

Jaundice from Constipation :- This is by no means an infrequent cause of mild forms of Jaundice. Fortunately, however, there is no case in which we can venture a more favourable prognosis, there being none in which the administration of medicine is followed by so speedy and so good results. Probably to this cause may be ascribed that mild form of Jaundice from which young men frequently suffer on their first commencing sedentary office duty. In the aged an accumulation of faeces in the colon is an occasional cause - and this condition may exist though a daily evacuation be maintained.

Illustrative Cases:- "Sir H. Marsh gives a very interesting example of this form of Jaundice which occurred in an old gentleman. (aet. 80). of an anxious and irritable turn of mind, who became affected with Jaundice of which he was cured by aperient medicine. Being supposed to labor under piles he had been in

the habit of taking medicine - so that each day an evacuation was maintained - He again became jaundiced, and certain medicines were prescribed after which large quantities of *scybala* were passed - and in a short time he was again free of Jaundice -

2. In a young woman whose constitution had been broken down by repeated courses of mercury - and who during her life was jaundiced - the following appearances presented themselves on a post mortem examination - "The quantity of knotty faeces, which occupied the colon was remarkable, and the more claims our attention when it is known that an alvine evacuation had been regularly maintained during life"

3. { From Dr. Bright's work on "Abdominal Tumors" - }
An old gentleman - who had been confined to bed, several days gradually became jaundiced - his bowels were reported as by no means constipated, and the motions shown were colored with bile. There was distinct hardness on the right side - thought to be the liver - He was treated as for organic disease - purgatives were afterwards substituted, when the quantity of feculent matter daily passed was almost beyond belief. The swelling, dulness on percussion and Jaundice gradually disappeared, being replaced by perfect health.

A state very nearly similar to that illustrated by the preceding cases is over indulgence at table. This appears to be a very rare cause of Jaundice. The following case is to the point and will answer in place of further remarks. { It is from Sir H. Marsh's Clinical Lectures in Dublin Medical Press of October 23^d. 1861 }

An old lady remarkable for her lively disposition, excellent memory and uniform flow of spirits, became affected with Jaundice. When visited she was listless, sleeps - and forgetful - even of the names of her own family. It appeared that her friends, to counteract dreaded approaching debility, forced on her large quantities of the most nutritious diet - and thereby overloading the stomach and intestines. Under small doses of aperient medicine, - food in small quantities and at regular intervals with such exercise as she could take - she was quickly restored to her former health and spirits -

Inflammation a cause of Jaundice:-

The Liver, from its protected situation, is not exposed to injuries from without -; but the peculiarity of its function, as ~~well~~ well as its vascularity, and contiguity to other organs, renders

it susceptible to inflammation: Unless amongst habitual drunkards "Hepatitis" is a very rare idiopathic disease in temperate climates, and consequently Jaundice from this cause is very seldom met with, more especially as it is not a necessary accompaniment of those cases in which inflammation does occur.

The Jaundice resulting from inflammation varies in intensity, and follows with more or less certainty according to the part of the liver inflamed, thus while we find chronic Hepatitis succeeded by faint - if any Jaundice -, occlusion of the common duct is attended by Jaundice of the most intense and fatal character.

The results of these various exciting causes are modified by the tissue engaged, as well as by the nature of the inflammation; while the gouty or rheumatic inflammations attacking the hepatic connective tissue does not produce bad results, the adhesive inflammation excited by indulgence in alcoholic stimulants produces permanent and most serious organic changes - known by the term "lob-nail" - or "gin drinker" liver - This last form of Jaundice is incurable, because the

effused lymph has become organized - forming ~~part~~ part of the living texture, and therefore incapable of being removed by medicinal means.

In cirrhose liver the secretion of bile is seldom or never completely arrested - the discharges from the bowels being colored with bile even in advanced ~~stages~~ stages - Cirrhosis comes on very insidiously unless the ducts be so involved as to impede the escape of bile - and thereby give rise to Jaundice. While in other cases it comes on suddenly and is marked by all the symptoms of inflammation, attended by Jaundice, high colored urine, &c. &c.

In such cases the Liver is much atrophied after the acute stage has passed though at the commencement of the attack it may be enlarged - This last form is frequently associated with ascites & has been described as "Acute Atrophy" by Frerichs.

Of this remarkable disease a few words may be added. It is accompanied by Jaundice of the most acute and fatal kind, attended by symptoms of blood poisoning, and marked derangement of the nervous system. The liver is much reduced in size, and has undergone a most complete disintegration of its structure, so that, sometimes, on microscopic

examination a healthy cell cannot be discovered. It runs a rapid course - in extreme cases ending fatally in 24 hours, and seldom prolonged to a week. The nervous symptoms appear after the Jaundice, which is connected in some way with mental influences.

Illustrative Cases - 1. E. L. aet. 23. admitted to Guy's Hospital on June 29th: under Dr. Wilks. She had not been long married, but quarrels with her husband had already occurred. She was said to be of dissolute habits. After being extremely Jaundiced for 5 days she fell into a typhoid state, Delirium came on, and she died. The Liver was found shrunken and lying against the diaphragm, It weighed only 1lb. 30grs:

2. Agnes Anderson - aet. 35. admitted to Hospital on December 10th. 1830, with Jaundice. Patient had lately suffered much mental distress having been forsaken by a man with whom she cohabited. On the 14th: she was drowsy - occasionally incoherent and staggered when walking: on the 17th: She was completely comatose - respiration stertorous - pupils dilated - the teeth firmly clenched, and breathing occasionally hurried with spasms. She died one week after admission.

* May this not rather have been caused by blood poisoning - ?

The liver was small, soft, and of a peculiar brownish yellow color - all the bile ducts were of natural color and pervious throughout: the gall-bladder was collapsed and contained a small quantity of bile. { Dr. Alison - Edin: med. & Surg: Journal. 1835 }

There is an unimportant but interesting form of Jaundice which occasionally accompanies Gout and Rheumatism. - These Dr. Graves { Clin: med: p. 504 } believes to be curable by the usual remedies for Gout or Rheumatism - : hence it is a matter of considerable importance that we should know the nature of the exciting cause -

As already stated Jaundice may be caused by extension of inflammation to the liver from neighbouring organs - as right lung or kidney - or duo-denum. The occasional simple attacks of Jaundice to which healthy persons are subjected after errors in diet, or over indulgence in tobacco is probably caused by catarrh of common duct - extending from the duodenum - : of Jaundice caused by excessive smoking I saw a marked example two or three winters since*.

The degree of the Jaundice thus caused { i.e. by inflammation in ducts } varies with the intensity of the inflammation, which may be simple catarrh

or acute inflammation attended by the formation of plastic lymph and followed by complete closure of the duct, and prevents the escape of bile as effectually as stricture of the urethra does that of urine. - If this stricture (be) exist in the common duct, as it sometimes does, the Jaundice produced is of the most intense form - generally persistent - and terminates fatally. The Jaundiced tint of the tissues, and excretions is deeper than under any other circumstance - especially if the liver have been previously healthy. In some of these acute cases the ducts and gall bladder become distended to their utmost limit, and may even burst into the peritoneal cavity producing fatal peritonitis.

Case. { Andral: as given by Budd in "Diseases of Liver" p. 156 }
 A shoemaker, aet. 35: was admitted to La Charité, on the 8th November 1821. Six days before, after over-indulgence at table, he was taken with sharp pain in the right of the epigastrium, a little below the edge of the ribs. The next day he remarked that his skin was yellow. On the 9th November, the seventh day of illness, the conjunctiva and the entire of the body had a yellow tint, and there was a dull pain

in the right hypochondrium. Below the cartilage of the eleventh rib - a pear-shaped tumor was felt, the broad end of which extended a little below the umbilicus, while the narrow end was lost behind the ribs. This tumor was supposed to be the distended gall-bladder. The four following days the tumor grew larger, but no other change took place. On the 13th Novr: - the eleventh day from his first feeling the pain in the side, the patient was suddenly seized with a much more severe pain, which, starting from the region of the liver, soon spread over the whole belly.

The pain continued extremely severe, and was much increased by the slightest pressure. The features became pinched, the pulse small and very frequent, and the extremities cold: the patient died in the afternoon of the next day -

State of Parts as revealed by a P.M. - The sac of the peritoneum was filled by a puriform fluid - everywhere yellow. The inner surface of the duodenum was intensely red. The entrance of the common duct was marked by a small round tumor, pierced at the summit by a capillary orifice - the opening of the duct. The coats of the common duct were much thickened, and easily torn, and the canal almost closed -

^x According to Dr. Budd.

The hepatic and the cystic ducts, and the gall bladder, were dilated. In the hepatic duct, just above its junction with the cystic, was a perforation, having an irregular, roundish outline, and large enough for the passage of a small pea. Around the perforation, the texture of the coats of the ducts did not seem altered. The tissue of the liver exhibited nothing remarkable. In the stomach were some spots in which the mucous membrane was red. Other organs healthy.

But though fatal cases like the above do occasionally occur, more generally the issue is not so rapid. For the gall-bladder and ducts, having gone on distending for a time, come to a stand still and then gradually diminish - thus showing that the secreting function of the gland is impaired by the pressure of the pent up fluid on the hepatic cells - and affords an example in which there co-exist two exciting causes of Jaundice^x. This chronic form is, also, usually followed by a fatal issue - from gradual exhaustion - with symptoms of suppurative fever - or by choleraemic poisoning -

Inflammation of the Gall-bladder - another

source of Jaundice - may be caused by calculi, which in their attempts to escape set up inflammation, followed by stricture of the cystic duct.

The office of the Gall-bladder is thus destroyed - and being converted into an abscess may prove fatal by ulceration and escape of its contents into the peritoneal cavity. The Jaundice resulting from the above cause is only temporary - for the bile in the bladder is soon absorbed and eliminated, and the supply being thus cut off the effect ceases.

The inflammation may commence in and be confined to the gall-bladder - at least for a time.

Case: { Dr. Graves' Clinical medicine p. 463 }.

Ann Milton, aet. 20 - servant, was admitted to the Meath Hospital. November 1st. 1841. About five weeks before admission she was attacked with pain in the right hypochondrium, extending to the epigastrium, which lasted two weeks, and was followed by Jaundice. After the skin became yellow the pain in the side diminished, but while it lasted she had constant vomiting and nausea. Three days after the setting in of pain and ten before the appearance of the Jaundice, she became affected with excessive itching of the skin, ceasing as soon

as the Jaundice appeared. At the time the skin became yellow, an herpetic eruption appeared over the hepatic region. On admission the skin and conjunctivae were deeply jaundiced. all objects appearing yellow - no itching of the skin, the linens over the eruption stained yellow, great thirst - bowels confined, sleep bad - pulse 50. breathing hurried. She had slight pain at a point between the right hypochondrium and epigastrium - greatly increased by pressure - On the morning of the 7th November. she became delirious, and died comatose that day. A Post mortem Examination showed - A liver not enlarged - of a light brown tinge - as if by an excess of coloring matter of bile. The Gall bladder was distended and completely filled by a dark green mass of a tenaceous viscid nature, apparently lymph - forming a cast of the gall bladder. The lining membrane of the gall bladder was bright scarlet and the honey-comb arrangement of its mucous membrane effaced - its walls were thickened. No gall stone in the bladder (gall). and no obstruction of any of the ducts. The dura-mater was stained yellow - the fluid in the ventricles was of a yellow color as were the parts in the floor of the ventricles.

PART II: According to a previous arrangement we now ~~proceed~~ to consider those forms of Jaundice in which there is no mechanical impediment to the escape of the bile into the intestinal canal.

The cases of Jaundice - and they are not few in number - which come under this class, have been supposed to be caused, in some cases, by spasmodic stricture of the bile ducts - Without denying the possibility of this being an occasional cause of slight transient forms of Jaundice, we consider it as being only applicable as an explanation in a very limited degree - for the following reasons -

1. Closure of the large ducts does not usually produce Jaundice till the third day -
2. Certain cases of Jaundice accounted for by the above explanation appear much sooner than the 3^d day.
3. We cannot imagine a spasm continuing such a length of time.

The forms of Jaundice placed in this class are caused - as a rule - either by mental emotions - or poisons - and are very generally attended by convulsions - delirium or coma - and frequently the liver is found atrophied -

Except in particular cases, as when immediately following on mental emotions - or resulting from known

poison - there are no sure means by which we can distinguish between these two classes - The forms of Jaundice unattended by structural hepatic change may be comprehended under the heads -

" Jaundice from mental emotions - and, Jaundice from blood-poisoning;

" The close connection existing between the liver and the brain is not only exemplified by diseases being propagated from the former to the latter, but also is strikingly illustrated by the opposite fact, viz - that morbid actions going on in the brain often implicate the liver, causing either functional derangement or active inflammation. Jaundice is often an immediate consequence of a blow on the head, or may follow mental excitement - and thus we have a condition - Jaundice - produced by causes altogether dissimilar in themselves.

By both the brain is most violently affected, and in both the injury is propagated to a distant organ - That deranged innervation should give rise to Jaundice cannot be regarded as impossible, especially when we consider the results of Claude Bernard's experiments. But these in no way remove the difficulty of explaining how these forms

of Jaundice are caused. We have already seen that 'Spasm' cannot account for it - neither can 'paralysis' be received, so long as the other agencies concerned in the excretion of the bile remain in action. Some may say that the cerebral complication was accidental, unconnected with the ~~original~~ ^{original} disease, and arising from causes quite distinct from the presence of bile in the blood. That the Jaundice is not the principal cause, much less the only one, is evident from the circumstance of so many cases of Jaundice being unattended by cerebral disorder. But it appears to be as certain that under peculiar conditions of the nervous system, hitherto unexplained, bile in the blood may give rise to delirium - Coma, convulsions.

Frichs supposes the Jaundice to be caused by -
 - „ an interruption to the circulation of blood through the liver, arising from the influence exerted by the nerves over the calibre of the branches of the portal vein - or 2. By interruptions to the heart's action, respiratory movements, and the renal secretions - The former of these conditions would entail increased formation and absorption of ~~blood~~ bile - and the latter, would give rise

to a diminished metamorphosis of bile in the blood. or limit its excretion - But both these theories are most unsatisfactory - and seem to be advanced to support a doctrine stated in an early part of his work - viz "That Jaundice from reabsorption, forms the sure starting point for future pathological inquiry - and in all cases and forms of the affection, where it is practicable the main question is to search for mechanical obstructions to the escape of bile". Could we detect the elements of bile in the blood all this difficulty would be got over, and we should at once have an explanation of these forms of Jaundice in Dr. Budd's theory of "Suppression". A more probable theory is that one first advanced by Breschet, who supposes ^{pigment} bile to be a derivative of haematin - and Virchow has shown that, under certain circumstances, a yellow substance is formed from haematin, which in its relations to reagents and solvents bears a close resemblance to Chlorophytin - But, unfortunate for this theory no one has yet succeeded in manufacturing bile-pigment from the coloring-matter of the blood, although the products of decomposition of both are

the same - The yellow matter, which, in cases of pyaemia circulates with the blood, is, at least in most cases, identical with bile-pigment, and participates in all the properties of this substance.

In many of the cases of Jaundice whose fatal termination is accompanied by derangement of the mental faculties, there appears to have been a previous broken down state of the constitution - frequently by an abuse of mercury - by excessive use of alcoholics - or by a combination of both. In many cases no such causes can be assigned -

Cases:- 11. A girl, aet: 20, while under the influence of mercury, lived intemperately and exposed herself to cold. she was one day abruptly told of the death of an uncle - the only relative who had shown her any kindness. She soon became Jaundiced - febrile symptoms appeared, becoming alarming from their violence - Then she lay in a state of apparent insensibility, when spoken to she seldom, and with difficulty replied - her breathing was stertorous. there was so much pain in the abdomen that peritonitis was apprehended. at the approach of night she could hardly be restrained in bed -

She screamed violently and was constantly agitated. She became insensible - eyes fixed - carotids throbbing violently - and still deeply jaundiced. The following evening she was again thrown into a state of extreme agitation, accompanied with loud screams. After midnight she was seized with convulsions, which came on in rapid succession and before morning she died. A "Post mortem" examination showed -

Some congestion of the vessels of the brain; there was not any effusion on the surface, nor unusual deposition of fluid in the ventricles - The substance of the liver was deeply tinged with bile - structure natural. The gall-bladder was contracted, and contained a small quantity of dark-green -ropy fluid: its internal membrane was very vascular. A probe could not be passed along the cystic duct from an elongation of the transverse folds of its inner membrane. The hepatic and common ducts were unobstructed. In the duodenum a circular patch about three inches in diameter was highly vascular - *?* Dublin Med. Press. October 23. 1861.

21. A young priest after being agitated, was seized by Jaundice, pain in the epigastrium, and vomiting. After a few days he became

restless, stupid and forgetful - then delirious and convulsed. He gnawed everything with his teeth and struggled violently: after being bled the convulsions ceased, when he lay motionless and comatose - dying on the fifth day. {Morgagni "de Sedibus et causis morborum" §.

But Jaundice may make its appearance immediately after violent mental emotions; several such cases are recorded, I fear, however, of doubtful authority. The following may be taken as an example. Villeminé says during a quarrel between two young persons, one of them suddenly became yellow and the other terrified at the change of color dropped his weapon.

There is an hysterical form of Jaundice occurring in females of a highly nervous temperament. The symptoms at first would lead us to conclude that the patient labored under a violent attack of colic, or that a gall-stone was impacted in the duct. Sydenham {in his "Treatise de Colica trilliosa"} says of it - that it attacks women of lax and gross habit of body, and such as have had their strength exhausted by parturition - it is accompanied by a pain, not less severe than that of iliac passion, in the region of the stomach, followed by copious

vomiting of matter, sometimes green, sometimes yellow. To these symptoms are added a depression of mind, and despair, exceeding that in any other disease: after a day or two the pain subsides, returning with unabated violence in a few weeks - It is accompanied by remarkable Jaundice, which after a few days spontaneously vanishes. The least commotion of mind - whether anger or fear causes a return of the pain."

The supervention of nervous symptoms in Jaundice, though not necessarily followed by death, must be looked on with great apprehension and cause us to give a guarded prognosis, more particularly if in a person reduced in health by either mental labor, or abuse of mercury - or alcoholic stimulants -

Jaundice caused by Poisons :- Several forms of fever, as also pyaemia, the inhalation of certain gases, and the bites of venomous reptiles, are accompanied or followed by Jaundice. This coincidence has long been noticed by writers, but none of them, in so far as I have seen, give a satisfactory explanation of how the fever poison by its direct action on the liver gives rise to Jaundice.

Of the causes of the frequent but not con-

stant yellow hue accompanying pyaemia. great diversity of opinion exists. Frerichs tells us { Vol. I. p. 162 } that it is a result of "impaired consumption of bile in the blood, arising from an abnormal condition of the metamorphic processes which go on in that fluid"; while Berard believed that "the color could not proceed from bile, because the eyes and urine were not tinged"; but these statements have been found to be incorrect for as a rule "the urine exhibits distinct indications of the presence of bile-pigment": again others ascribe it to a transformation of the coloring matter of the blood into yellow pigment.

Unsatisfactory as these theories are we find matters still worse when we proceed to consider the { occasional } causes of the occasional deep jaundice which follows on bites of the more poisonous snakes - The old authors looked on it as a result of spasm of the gall ducts, or due to a liquefaction of the bile resulting from putrid decomposition: but the most modern authority is pleased to plead ignorant, seeing that it cannot be accounted for on merely mechanical principles. It is quite possible that it may be due, as Frerichs hints, to the action of the poison on the nervous system.

The supervention of Jaundice in Fevers is of little more than scientific interest, having little influence on the course and termination of the disease.

Of the prevalent forms of fever, the Yellow and Recurrent are the varieties which are most generally attended by Jaundice - In Typhus its presence depends on the character of the epidemic - while in Typhoid the existence of Jaundice is exceptional.

In Yellow Fever, cases of which occasionally appear in the British Isles, the yellowness of the skin is, in some examples most marked, the patient being a bright yellow color for 20 or 30 hours before death in fatal cases - In the epidemic of 1826 numerous examples of Yellow fever occurred in Dublin - as there did in Dundee in the epidemic of 1843. In both these the symptoms agreed with those usually given as characteristic of Yellow fever -; but in few cases did the pathological lesions coincide with those laid down by Louis on the essential anatomical character of this fever.

Dr. Graves says - that in none of the cases examined by him was there inflammation of the liver or obstruction of the gall ducts, but in all

There was evident marks of inflammation of the mucous membrane of the stomach, and in almost every case intus-susception in the small intestines.

Dr. Graves concludes that "the Jaundice of yellow fever is independent of hepatitis"; and that Broussais' opinion, which regards the yellow color as due to the extension of inflammation from the irritated duo-denum, is "more near the truth, but does not seem quite satisfactory", because if such were the case we should expect to find the liver inflamed which we do not.

Dr. Nott says "of eight cases dissected during the epidemic of 1843, in Mobile, the liver in two only corresponded with the description of Louis."

Dr. Laycock believes the yellow color met with in some cases of fever is due to an effusion of a thin layer of blood into the cellular tissue.

Probably we may rightly place "Epidemic Jaundice" under this head. It is a variety badly understood both in its pathology and etiology - but on the whole we are inclined to believe that it has for its cause the introduction of a poison into the system. It may or may not be attended by fever, and as yet no anatomical lesion has been found to account for

x. I should have appeared under the First Section -
- Laundice by mechanical obstruction -

the symptoms. Its fatality varies much with the localit.

Before concluding I would briefly refer to two varieties of Jaundice which have escaped notice, and ^{one of} which, indeed, could not be confined to any one head. —

11. The Jaundice of Pregnant Females. { Icterus Gravidarum? } During pregnancy — the latter months especially — Jaundice is most apt to appear, and may depend on several causes — an accumulation of faeces in the colon, or direct pressure of the distended uterus on the liver —, the former may be removed by aperient medicines — and the latter by delivery — Again it is said that a large proportion — 30 per cent — of all cases of "Acute Atrophy" occurs in pregnant females. This condition has already been noticed —

12. The Jaundice of Infants. { Icterus neonatorum? } That the yellow skin of newly born children is due to Jaundice is proven by the fact of bile pigment being detected in the urine, or also from the color of the conjunctivae. Some cases of infantile Jaundice come under the category of "pyaemic"; while others are believed to depend on Catarrh of the bile ducts, or to be merely one of ^{the} results of the revolutions, which take place in the organism of the child during birth —

It is perhaps invariably fatal when due to "Phlebitis umbilicalis" - but when depending on other causes it, as almost invariably, terminates favorably - It is a mild affection in the latter class of ^{cases} affections - gradually disappearing, as the child becomes habituated to its new modes of life -

We have thus referred to most of the forms of Jaundice - except those which are due to congestion of the liver - be it the congestion of inflammation or that which frequently occurs in cardiac diseases - In the latter diseases we most commonly meet with Jaundice near the closing of life - perhaps a few days before death.

Robert Alexander