MEDICINE

New Kind of Jaundice

A pigment in the liver, yet to be identified, led to discovery of this chronic but not "catching" condition whose cause is so far unknown.

➤ A NEW kind of jaundice has been discovered in young people. It may be related, chemically, to a hereditary golden fleece condition of sheep.

The important thing about this new jaundice, however, is that the outlook is good. Those who have it can live normal and presumably long lives, although their skin and eye whites may turn yellow now and then. They do not need an operation and they do not need to spend weeks in bed. Their jaundice is not "catching."

The golden fleece link comes from examination of the livers of these people. Their livers contain a pigment, or color chemical, which so far has defied identification, but it may belong to the family of color chemicals called mesobilifuscins that the sheep with golden fleece excrete.

The golden fleece jaundice of humans was discovered by Drs. I. N. Dubin and Frank B. Johnson of the Armed Forces Institute of Pathology, Washington. They do not call it golden fleece jaundice. Their name for it is "chronic idiopathic jaundice with unidentified pigment in liver."

Translated, that means it is a chronic condition without, so far, any known cause and in which there is an unknown color chemical in the liver.

Discovery of this new kind of jaundice, however, may save many people from operations, long weeks in bed and chronic invalidism. It may save the armed forces many a healthy serviceman and it may save the United States many a dollar in pensions. All this because heretofore the new jaundice has been confused with or misdiagnosed as viral hepatitis or obstructive jaundice.

The new jaundice was discovered by some medical detective work, although no one had sent Drs. Dubin and Johnson on a new disease hunt.

Dr. Dubin's special job at the Armed Forces Institute of Pathology is to handle the bits of tissue, or sections, on glass slides, from the liver and bile tract. They are sent to the AFIP from Defense Department installations all over the world. So many of these arrive, especially now that viral hepatitis has become a widespread disease, that he sees more of the specimens and slides in two years than any other man might see in a lifetime.

Poring over these slides with his microscope, Dr. Dubin one day saw something he had never seen before. It was a section of perfectly normal-looking liver except that its cells contained striking amounts of brown material that he could not identify. The slide gave a picture unmistakably different from all the others.

When Dr. Dubin saw a second one like it, he went to the files at the AFIP and dug out all the slides of liver sections. He found that within the last two to three years, about a dozen of these strange liver sections had come in.

Next step was to get out the histories, or medical records, of the patients from whom the specimens came. Reading these over, he and Dr. Johnson saw that the symptoms and laboratory tests fell into a common pattern.

The patients were all young. Almost all had had jaundice off and on for some years. One stated he had yellow eyes since birth. Abdominal pain and fatigue were common symptoms, along with the jaundice, dark urine and slight enlargement of the liver.

In many, the jaundice had flared up during an attack of some other sickness, such as scarlet fever or pneumonia, or under the stress of unusually hard work.

Chemical tests of the blood indicated something wrong with the liver. There was an abnormally large amount of the bile pigment, bilirubin, in the blood serum. X-ray examination after a dye had been given always failed to show the gall bladder. With signs of non-functioning gall bladder and of possible obstruction to the bile flow, the doctor of such a patient had "practically no choice" but to advise operation to see what was wrong and to remedy it if possible.

At operation, however, these patients always proved to have perfectly normal gall bladders and bile ducts and normal-looking livers, except for the color. This varied from green to greenish-black to slate blue.

This color is so characteristic that now a doctor taking out a bit of liver with a needle (a simple examination now made frequently for diagnostic purposes) can tell from the tiny disc he has removed that the patient has this new jaundice.

Examination of the tiny piece under the microscope shows the brown pigment that confirms the diagnosis.

Before Dr. Dubin's discovery, patients with this condition not only had needless operations and spent months in bed while doctors made every known test and tried every known treatment, they also would finally be sent home from the hospital with some grim-sounding diagnosis such as chronic viral hepatitis.

To some, this meant they were crippled and unfit as surely as if they had lost a leg. Some felt they could never work again and must have a pension. Others, young men in the Armed Forces, were disgusted at being kept off duty or separated from the service for an ailment that did not make them feel sick except once in a while, and for occasional yellowing of skin and eye whites they had had all their lives.

The cause of the condition is not known. Drs. Dubin and Johnson believe it is some inborn defect of the liver that makes it unable to handle certain color chemicals, including the dye used to visualize the gall bladder under X-rays.

They stress that it is not serious and that the patients should not be operated on, and should not be converted into physical or mental cripples by a false diagnosis.

So far, 16 cases have been discovered, 12 of them in a check of about 5,000 medical records. While this is not a large number, Drs. Dubin and Johnson think there are many more that have not been recognized or have been misdiagnosed.

A full report of their findings appears in *Medicine* (Sept.).

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CHEMISTRY

Chemicals in Opium Ash Will Aid Drug Control

➤ A STOPPER for at least part of the world-wide narcotic drug menace has been discovered by Drs. J. C. Bartlet and C. G. Farmilo of the Food and Drug Laboratories, Canadian Department of National Health and Welfare, Ottawa.

The discovery is that the place where the raw opium came from can be determined by chemical analysis of the ash when the opium is burned.

Indian opium, for example, has high potassium and low calcium content in the ash. The druggist type of Turkish opium, on the other hand, has a high calicum and low postassium content.

Knowing the source of the opium should help tighten control measures and suppress illegal production in those areas of the world where the illicit traffic in opium originates, the scientists point out in *Nature* (Aug. 28).

Opium is produced from one species of poppy plant, *Papaver somniferum,* but the composition of its ash varies significantly, depending on the geographical origin of the opium. This variation in ash composition probably depends on varieties within the species and on such local features as soil, climatic conditions and agricultural techniques.

In Iran, the processing of raw opium probably has contributed to the variation.

The Canadian scientists have now analyzed more than 100 opiums from Yugoslavia, Turkey, Iran, India, Indo-China, Korea and China. Tests were made for both major and minor constituents.

The elements determined were potassium, calcium, phosphorus, sodium, magnesium, silicon, iron, aluminum, titanium, boron, manganese, molybdenum, lead, tin and copper. Spectrographic, colorimetric and flame photometric procedures were used.

The work was undertaken under a UNESCO program.

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