

Common External Marks of Occupation or Occupational Diseases or Other Diseases (concluded)

Mark or sign

Abnormalities of facies
(continued)

Characteristics

In *neurotica* and *hysterical* persons, the facies may give a hint that such states exist. The expression is characterized by amiable but silly smiling on an otherwise empty face, or instead repeated but not continuous frowning may take place in the absence of any reason for such. Irregularly these faces exhibit facial tics.

The facies of congenital *syphilis* are characteristic in adults. The forehead is overhanging and bumpy, the bridge of the nose is depressed (saddle nose), linear scars radiate from the angles of the mouth. Hutchinson's teeth, elsewhere described, may be present.

Occasionally a patient with beginning but well-established *pneumonia* may be still at work. Although the characteristic facies may not have established themselves, they, if present, will show a flushed skin, the breathing may be rapid and hurried, and possibly associated with a grunt at the end of every exhalation. Herpes may be present; the eyes kisten; the expression is that of anxiety.

In some cases of *hyperthyroidism*, the facies continually reflect astonishment—staring facies. This is brought about by protruding eyeballs, which bare more than normal proportions of the whites of the eyes; the eyebrows may be lifted; the skin of the face may be flushed and moist.

In *shaking palsy*, the face may be so motionless as to appear nearly starched, but accompanying this there may be tremors of the entire head with eyes wide open and the eyeballs in motion. Such an expression in this disease may be accompanied by tremors of the hands or legs and a jumpy speech.

In *thyroid deficiency*, the features are thick, coarse, broad. The face is moonlike, expressionless, and stolid; the outer third of the eyebrows may be missing or scanty; the skin is dry. "Pudgy" characterizes these facies.

Cyanotic facies (cyanosis elsewhere mentioned) may arise from several industrial causes, as well as non-industrial. In either instance, the ears, lips, cheeks will take on a bluish-purple tinge which frequently also may be observed at the finger tips.

Some clearly indicative facies scarcely lend themselves to verbal presentation. Thus, the chronic alcoholic reveals his intemperance by his little-describable physiognomy; so also the facies of early tuberculous meningitis, which is unlikely to be seen in industry. Of interest ordinarily limited to the physician are the revealing facies of complex central nervous system diseases, such as myasthenia, dystrophia, acromegaly, articular degeneration, etc. It is obvious that not in all and every case of the several states or diseases mentioned will the facies be so characteristic as here mentioned, which by design attempt to portray well-established conditions.

CHAPTER XVI—SECTION ONE

Fire and Explosion Hazards of Combustible Gases and Vapors*

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Fires and explosions resulting from the presence of combustible gases and vapors are among the major hazards in present industrial operations. There is need for a greater appreciation of these hazards and better understanding of means of mitigating and preventing them.

I. Limits of Flammability

Confusion has arisen regarding the meaning of the terms "explosive limits," "flammable limits," and "limits of flammability." In the final analysis these different expressions mean the same thing. Some authorities regard explosive limits as those limiting mixtures within which flame will propagate through the entire volume of the mixture and develop appreciable pressure, while flammable limits or limits of flammability, are regarded as those limiting mixtures within which flame will propagate entirely through the mixture without regard as to whether pressure is produced.

It is impossible to distinguish a flammation from an explosion by the amount of violence produced. Mixtures just within the limits of flammability, if confined in a long tube and tested by opening one end and igniting at this open end, will propagate flame quietly and slowly through the tube (usually at a uniform speed) and the speed, for a given concentration of combustibles in air, will vary with the direction of flame propagation. This mixture, if confined in a closed bomb of adequate dimensions and ignited when the gases are in motion or gentle turbulence will propagate flame at a speed several times as fast as that in the open tube and develop pressures ranging up to 30 p.s.i. or more. Thus it is seen that the pressure developed by a flammable mixture depends upon the environment and direction of flame propagation; therefore, no differentiation should, or can, be made between explosive limits and limits of flammability.

*From the Central Experiment Station, Bureau of Mines, U. S. Department of the Interior, Pittsburgh, Penna.; revised November 15, 1954.