

Acardius.
Acclimatization.

some sections attains the enormous dimensions seen ordinarily in common warts, and its lowest layer contains great quantities of pigment. The papillæ are elongated, sometimes attaining a length of 6 or 8 mm., and often ramify, following the digitations of the epithelium above them. They show no evidence of increase in width. The subpapillary layer and the cutis itself show but very slight changes—a moderate increase in the number of emigrated cells, of mast and pigment cells.

In most of the cases there has been more or less positive evidence of cancer affecting the abdominal organs. In the two cases in which an autopsy was obtainable there was an extensive carcinosis of the abdomen, which, while it spared the adrenal bodies, was especially noted as involving the lymph glands in close proximity to the large sympathetic ganglia. There is no doubt that the disease is directly dependent on the existence of abdominal cancer, but whether it be a cutaneous manifestation of a peculiar cancer intoxication or whether it be due to changes induced in the great sympathetic ganglia through the pressure of the tumors on them, or to the combined action of both these causes, is a matter that future investigation must determine.

Diagnosis.—Ichthyosis, pityriasis rubra pilaris, and keratosis folliculorum (Darier's disease) are the only diseases which may bear even a remote resemblance to acanthosis nigricans. Ichthyosis is a mild congenital disease, persists throughout life without producing any general disturbances, is located chiefly on the extensor surfaces, never affects the mucous membranes, and is characterized by constant desquamation in more or less extensive scales. Pityriasis rubra pilaris, sometimes occurring in extensive sheets about the great flexures and presenting the peculiar discoloration common to many hyperkeratoses, may suggest acanthosis nigricans, but in all other respects there are more points of difference than of resemblance between the diseases. Darier's disease is differentiated by the limitation of the affection to the follicles, the non-involvement of the mucosa, the peculiar greasy character of the affected surfaces, and the occasional occurrence of large nodular masses from which a foul secretion is discharged. The differentiation from the various pigmentary affections of the skin need not be entered into.

The prognosis of the disease is, of course, that of the underlying cause—the abdominal cancer; that is, it is hopeless. In some of the cases the cutaneous manifestations have undergone a varied course, probably depending upon changes in the location or size of the tumors in the abdomen. In my own case there was an almost complete disappearance of the affection of the skin and mucous membranes shortly before the patient died.

Sigmund Pollitzer.

ACARDIUS. See *Teratology*.

ACARI. See *Arachnida*.

ACAROIDES GUM. See *Zanthorrhiza Resin*.

ACCLIMATIZATION.—When any animal, brute or human, is removed from the environment to which he and his ancestors have long been accustomed, a considerable disturbance of the whole economy is liable to ensue. The process of evolution has developed certain organs and certain functions in accordance with the requirements of those circumstances under which his race has found itself, and when he is suddenly transplanted into new conditions some of his faculties become without occupation, while others hitherto uncalled upon, and therefore undeveloped, are suddenly subjected to a demand to which they are quite unable to respond. The process of accommodation of the individual to new conditions of climate is known as acclimatization or acclimation. These conditions include temperature, moisture, morbid germs, elevation, sunshine, food, and other less tangible factors. Such elements as are connected with the social rather than the natural environment, as, for instance,

education, the standard of public morality, and the avocation or means of livelihood, while in any radical change that they may undergo profoundly affecting the individual, are yet to be held distinct from the conditions to which acclimatization properly refers.

No other animal is so facile in his accommodation to changes of climate as man. The lower animals and plants often do not recover for several generations from the effects of transplantation. The Société d'Acclimatization of Paris has for years been carrying on, in its gardens, an extensive zoölogical experiment on the domestication of foreign animals and plants which it is believed can be made useful to European countries. The record of its failures and successes is embodied in the numerous volumes of its reports. Man's comparative immunity from the disastrous effects of changing climate is due in part to his ability, by an intelligent prevision of the dangers which are to beset him, of guarding against them. The records of arctic explorers present abundant evidence of the ability of the denizens of temperate climes to endure winters in which the thermometer averages from 40° to 50° F. below zero. On the other hand, Europeans have lived in health and cheerfulness on the banks of the Senegal when the thermometer in their tents stood at from 126° to 130° F. Men endure extremes of barometric pressure ranging from that of several atmospheres, as found in caissons, to the tenuity of the air experienced at great elevations. In the Himalayas men have lived at the height of 15,000 feet, and Humboldt even went to the elevation of 19,286 feet, where he remained for a time without ill effects; but where no animal but a dog would follow him, and this creature quite lost the power of barking.

The differences in the facility of acclimatization at various points in the same latitude are shown by an article reprinted in the *Popular Science Monthly* for July, 1884. Between 30° and 35° N. latitude, Europeans acclimate much less readily than in the same latitudes south. Algiers, for instance, is vastly more difficult for the European to live in than Cape Colony, yet both places are about latitude 35°. The Argentine Confederation and New South Wales are more healthy than the East and West Indies, which are of the same latitude. The mortality of the French and English troops has been found to be about eleven times as great at foreign stations in the northern as at those in the southern hemisphere. The chief cause of the difference is in the prevalence of miasmatic fevers so deadly to Europeans. Those fevers in the northern hemisphere occur even in high latitudes, while south of the equator they do not extend beyond the tropic. The island of Tahiti, for instance, about latitude 18° S., is quite exempt from these fevers. The records of the French and English soldiers on foreign service show, in South America, a sickness from malarial fevers of 1.6 in 1,000 men per annum; while in a similar latitude in the northern hemisphere, the number of such cases annually is 224 per 1,000.

To persons removing from one point to another within the temperate zone, one principal obstacle to acclimatization is change (especially diminution) in barometric pressure. Many persons on going to an elevation of not more than 6,000 feet experience a sense of constriction in the chest as well as across the liver and stomach. The pulse is quickened, as is also the respiration. The individual sometimes feels that he cannot take a long breath, and is often testing himself to see if he can do so, but the act does not relieve the air-hunger. Slight exertion causes fatigue and sleep is disturbed and fitful. If there was any pre-existing heart trouble, the condition may soon become perilous. Anything like a congestion of the internal organs adds to the danger of ascending to high altitudes. If the unpleasant symptoms continue after a day or two of perfect rest, it is advisable to make no further attempt to secure acclimatization.

The practical questions of greatest importance connected with acclimatization are those relating to the colonization of Anglo-Saxon peoples in tropical countries, which, while they have long concerned our English



Fig. 1. Shows the roughened and discolored condition of the neck.

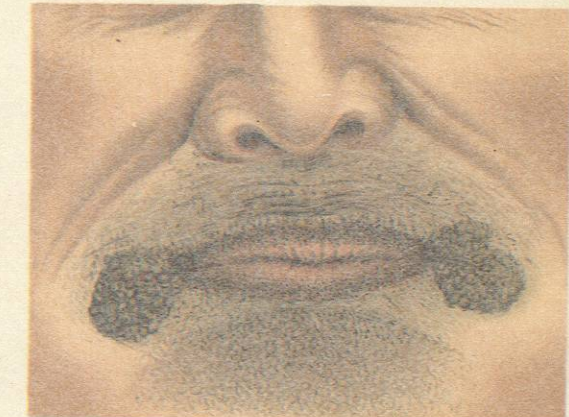


Fig. 2. Shows the discoloration about the lips and chin, and the condylomatoid proliferation at the angles of the mouth.



Fig. 3. Microscopic section through one of the condylomatoid masses at the mouth.

Acanthosis Nigricans. (Case of Dr. S. Pollitzer; from the International Atlas of

some sections attains the enormous dimensions seen ordinarily in common warts, and its lowest layer contains great quantities of pigment. The papillae are elongated, sometimes attaining a length of 6 or 8 mm., and often ramify, following the digitations of the epithelium above them. They show no evidence of increase in width. The subpapillary layer and the cutis itself show but very slight changes—a moderate increase in the number of emigrated cells, of mast and pigment cells.

In most of the cases there has been more or less positive evidence of cancer affecting the abdominal organs. In the two cases in which an autopsy was obtainable there was an extensive carcinosis of the abdomen, which, while it spared the adrenal bodies, was especially noted as involving the lymph glands in close proximity to the large sympathetic ganglia. There is no doubt that the disease is directly dependent on the existence of abdominal cancer, but whether it be a cutaneous manifestation of a peculiar cancer intoxication or whether it be due to changes induced in the great sympathetic ganglia through the pressure of the tumors on them, or to the combined action of both these causes, is a matter that future investigation must determine.

Diagnosis.—Ichthyosis, pityriasis rubra pilaris, and keratosis follicularum (Darier's disease) are the only diseases which may bear even a remote resemblance to acanthosis nigricans. Ichthyosis is a mild congenital disease, persists throughout life without producing any general disturbances, is located chiefly on the extensor surfaces, never affects the mucous membranes, and is characterized by constant desquamation in more or less extensive scales. Pityriasis rubra pilaris, sometimes occurring in extensive sheets about the great flexures and presenting the peculiar discoloration common to many hyperkeratoses, may suggest acanthosis nigricans, but in all other respects there are more points of difference than of resemblance between the diseases. Darier's disease is differentiated by the limitation of the affection to the follicles, the non-involvement of the mucosa, the peculiar greasy character of the affected surfaces, and the occasional occurrence of large nodular masses from which a foul secretion is discharged. The differentiation from the various pigmentary affections of the skin need not be entered into.

The prognosis of the disease is, of course, that of the underlying cause—the abdominal cancer; that is, it is hopeless. In some of the cases the cutaneous manifestations have undergone a varied course, probably depending upon changes in the location or size of the tumors in the abdomen. In my own case there was an almost complete disappearance of the affection of the skin and mucous membranes shortly before the patient died.

Sigmund Pollitzer.

ACARDIUS. See *Teratology.*

ACARI. See *Arachnida.*

ACAROIDES GUM. See *Southern Pine Resin.*

ACCLIMATIZATION.—When any natural being or human, is removed from the environment to which he and his ancestors have long been accustomed, a considerable disturbance of the whole organism is apt to ensue. The process of evolution has developed certain organs and certain functions in accordance with the requirements of those circumstances under which his race has found itself, and when he is suddenly transplanted into new conditions some of his faculties become without occupation, while others hitherto uncalled upon, and therefore undeveloped, are suddenly subjected to a demand to which they are quite unable to respond. The process of accommodation of the individual to new conditions of climate is known as acclimatization or acclimation. These conditions include temperature, moisture, morbid germs, elevation, sunshine, food, and other less tangible factors. Such elements as are connected with the social rather than the natural environment, as, for instance,

education, the standard of public morality, and the avocation or means of livelihood, while in any radical change that they may undergo profoundly affecting the individual, are yet to be held distinct from the conditions to which acclimatization properly refers.

No other animal is so facile in his accommodation to changes of climate as man. The lower animals and plants often do not recover for several generations from the effects of transplantation. The Société d'Acclimatization of Paris has for years been carrying on, in its gardens, an extensive zoological experiment on the domestication of foreign animals and plants which it is believed can be made useful to European countries. The record of its failures and successes is embodied in the numerous volumes of its reports. Man's comparative immunity from the disastrous effects of changing climate is due in part to his ability, by an intelligent prevision of the dangers which are to beset him, of guarding against them. The records of arctic explorers present abundant evidence of the ability of the denizens of temperate climes to endure winters in which the thermometer averages from 40° to 50° F. below zero. On the other hand, Europeans have lived in health and cheerfulness on the banks of the Senegal when the thermometer in their tents stood at from 120° to 130° F. Men endure extremes of barometric pressure ranging from that of several atmospheres, as found in caissons, to the tenuity of the air experienced at great elevations. In the Himalayas men have lived at the height of 15,000 feet, and Humboldt even went to the elevation of 19,286 feet, where he remained for a time without ill effects; but where no animal but a dog would follow him, and this creature quite lost the power of barking.

The differences in the facility of acclimatization at various points in the same latitude are shown by an article reprinted in the *Popular Science Monthly* for July, 1884. Between 30° and 35° N. latitude, Europeans acclimate much less readily than in the same latitudes south. Algiers, for instance, is vastly more difficult for the European to live in than Cape Colony, yet both places are about latitude 35°. The Argentine Confederation and New South Wales are more healthy than the East and West Indies, which are of the same latitude. The mortality of the French and English troops has been found to be about eleven times as great at foreign stations in the northern as at those in the southern hemisphere. The chief cause of the difference is in the prevalence of miasmatic fevers so deadly to Europeans. Those fevers in the northern hemisphere occur even in high latitudes, while south of the equator they do not extend beyond the tropic. The island of Tahiti, for instance, about latitude 18° S., is quite exempt from these fevers. The records of the French and English soldiers on foreign service show, in South America, a sickness from malarial fevers of 1.6 in 1,000 men per annum; while in a similar latitude in the northern hemisphere, the number of such cases annually is 224 per 1,000.

To persons removing from one point to another within the temperate zone, one principal obstacle to acclimatization is change (especially diminution) in barometric pressure. Many persons on going to an elevation of not more than 3,000 feet experience a sense of constriction in the chest as well as across the liver and stomach. The pulse is quickened, as is also the respiration. The individual sometimes feels that he cannot take a long breath, and is often testing himself to see if he can do so, but the act does not relieve the air-hunger. Slight exertion causes fatigue and sleep is disturbed and fitful. If there was any pre-existing heart trouble, the condition may soon become perilous. Anything like a congestion of the internal organs adds to the danger of ascending to high altitudes. If the unpleasant symptoms continue after a day or two of perfect rest, it is advisable to make no further attempt to secure acclimatization.

The practical questions of greatest importance connected with acclimatization are those relating to the colonization of Anglo-Saxon peoples in tropical countries, which, while they have long concerned our English



Fig. 1. Shows the roughened and discolored condition of the neck.

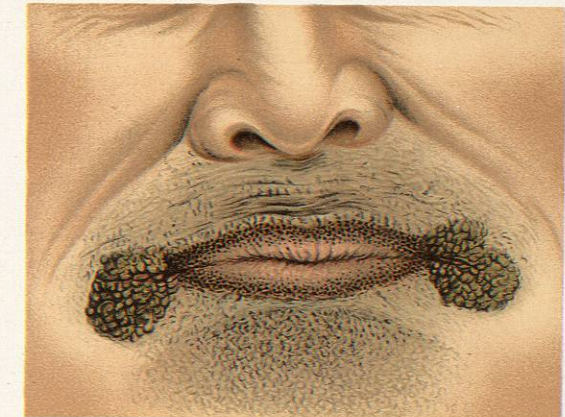


Fig. 2. Shows the discoloration about the lips and chin, and the condylomatoid proliferation at the angles of the mouth.



Fig. 3. Microscopic section through one of the condylomatoid masses at the mouth.

Acanthosis Nigricans. (Case of Dr. S. Pollitzer; from the International Atlas of