

knowledge of these changes, however meagre such may be at present, controls and guides us in the treatment of this common but really complex disorder in infancy.

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AN ATROPINE TEST IN ASTHMA

BY

MARJORIE GILLESPIE, M.D.GLAS.*

(From the Department of Physiology, King's College, London)

Among the drugs used in the treatment of asthma, atropine has always held a prominent place, but its therapeutical value has been found to be much less constant than that of adrenaline. Atropine acts, presumably, by paralysing the nerve endings of the vagus, and so preventing stimuli from the vagus centre reaching the bronchial muscle. Broncho-constriction has been shown to result from stimulation of the upper respiratory tract—that is, reflex stimulation of the bronchial muscle through the vagus centre. In many cases of asthma the treatment of nasal abnormalities has been sufficient to abolish attacks, which would suggest that these attacks were of "nervous" origin. It is also acknowledged that psychical stimuli in some patients play a considerable part in inaugurating a spasm. Since atropine prevents nervous stimuli from reaching the bronchial muscle, it has been thought that it might be used to differentiate between broncho-constriction due to reflex stimulation of the vagus and that due to direct stimulation of the bronchial muscle—that is, between nervous and chemical stimulation.

By using the method introduced by McDowall and Thornton (1930) for recording the movements of the isolated bronchi, it has been shown that contraction of the bronchial muscle follows the injection of pilocarpine, and that a small dose of atropine immediately after produces complete dilatation. A second dose of pilocarpine now produces no result, but a very small dose of histamine still causes the muscle to contract. Histamine is supposed to act directly on muscle, while pilocarpine acts through the nerve endings. Similar contractions are obtained by injecting other substances known to act directly on the muscle. The amount of atropine injected was small (0.13 mg.), as larger doses may paralyse the muscle itself.

The usual method of administering atropine in asthma is as tincture of belladonna in a mixture to be taken by the mouth, but the unpleasant dryness of the mucous membranes and the effect on the pupil prevent its continuous use. As a method of estimating the part played by nervous stimuli in inaugurating broncho-spasm, a full dose of atropine might be injected subcutaneously at the onset of an attack. In those cases where contraction of the bronchial muscle is due to direct chemical stimulation of the muscle, atropine would be expected to have no effect, whereas, in the truly nervous type the attack would be aborted. In this way the patients whose attacks are due to psychical stimuli alone could be differentiated from those who owe their symptoms to a fundamental chemical alteration of the blood.

I wish to express my thanks to Professor R. J. S. McDowall, who suggested this method of differentiation.

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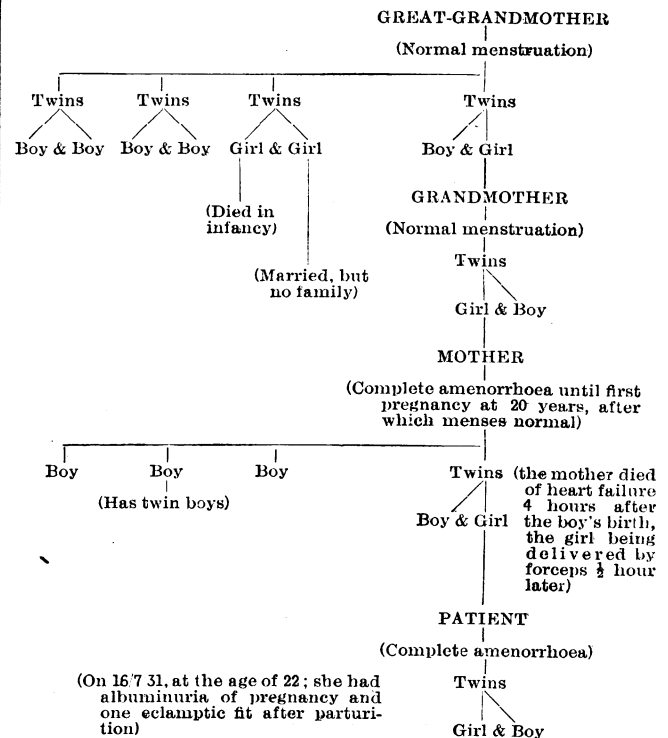
* Working with a grant from the Asthma Research Council.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

FOUR GENERATIONS OF HETEROSEXUAL TWINS WITH PREPARTUM AMENORRHOEA IN TWO GENERATIONS

The genealogical tree shown below is that of a woman who was admitted to hospital on account of twin pregnancy and a mild degree of albuminuria. She was 22, and had never menstruated. Her twins were of opposite sex. Inquiry revealed that this was the fourth generation of heterosexual twins, and that the patient's mother had also had amenorrhoea up to the time of her first pregnancy at the age of 20.



I am indebted to Dr. C. J. Penny for permission to publish this case.

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L.R.C.P.

Bromley, Kent.

House-Physician, Royal Hants
County Hospital.

BILATERAL HERPES ZOSTER

Since Darier has stated that herpes zoster is almost invariably unilateral (*Précis de Dermatologie*, 1918) and Sutton (*Diseases of the Skin*, 1928) makes the same observation, but notes that bilateral cases have been described by Fordyce (*Journ. Cut. Dis.*, 1915, 319) and Howard Fox (*ibid.*, 1915, 492) this case which—was recently under my care would seem worthy of publication.

A healthy man, aged 21, consulted me on June 15th, 1931. He stated that on June 12th he felt ill, had a sore throat and a headache, and thought that he had a temperature; as he felt no better on the following day he stayed in bed. On June 14th he had some pain behind the right ear, and later in the day noticed the eruption on account of which I was asked to see him. At this time there were well-marked herpetic vesicles on an area the size of a florin over the right parotid gland and over the outer surface of the pinna of the right ear; he had a temperature of 101° F. He was ordered to stay in bed, and was given sodium salicylate internally and a dusting powder for external application.

On June 17th typical lesions of herpes zoster appeared on a similar-sized area over the left parotid and over the outer and inner surfaces of the pinna of the left ear. During this time he complained of much pain behind both ears, and felt ill. The pains had ceased by June 19th, and the eruption was beginning to dry up. By June 22nd the eruption was disappearing, and he felt quite well.

In this case there was no associated facial paresis, such as is sometimes seen in cases with this distribution. There was no history of any contact with varicella, and the most probable source of the trouble would seem to have been the throat infection.

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Reports of Societies

DISEASES CONVEYED BY MILK

At the forty-ninth annual congress of the National Veterinary Medical Association of Great Britain and Ireland, which was held at Norwich from August 22nd to 28th, Messrs. M'ALLAN and HOWIE of Aberdeen contributed a paper entitled "Milk hygiene," in which they considered the more important diseases carried to man by milk.

Undulant fever had recently been given great prominence, particularly as regards its association with animals. The organisms found in animals gave rise to symptoms in man which were so indefinite that differential diagnosis was almost impossible without the aid of serological methods. Failure in diagnosis probably accounted for the paucity of recorded cases in the past, since the disease was now being reported with comparative frequency from various countries. In Aberdeen seven definite cases had been recorded in the last two years during the routine examination of 250 blood samples sent in for the Widal test. The biological examination of milk in recent years had revealed that about 25 per cent. of cattle were infected in this country, yet the disease was relatively uncommon in man. On the Continent and in America the strain of organism most commonly found in man was the porcine, which was rare in Britain, and might account for the comparative immunity of human beings. One of the human cases in Aberdeen was traced to the milk of a cow which had been vaccinated with a porcine strain. Milk-borne salmonella infections were not common in this country, and were probably, in most cases, the result of human contamination; in some outbreaks, however, the disease appeared to originate with the cow, and three outbreaks were cited to illustrate this. In 1925 an outbreak involving 497 persons was traced to a single cow, the udder of which was infected with a strain of *B. enteritidis* in every way identical with that recovered from the patients. The second instance only involved nineteen persons, and was traced to an intestinal infection of the cow with the *B. enteritidis* of Gaertner. The milk had been contaminated by the faeces, and the outbreak disappeared with the removal of the infected cow. The third case, which was similar to the last, was due to the bacillus of Aertrycke.

Tuberculosis was undoubtedly the most important of the diseases carried by milk. In Scotland there was in progress an investigation into the numerical incidence of tubercle bacilli in milk, in which methods of sampling and laboratory technique were uniform for the four centres engaged in the inquiry. Each centre would examine 1,950 samples during a period of two years (650 samples of raw milk, 650 of pasteurized, and 650 of retailed milk). Results for the first six months indicated that the per-

centage of positive samples was likely to be greater than was generally accepted. Milk was most frequently infected directly from the udder, and the opinion was expressed that bacilli might be eliminated in the milk some time—perhaps several months—before any clinical evidence could be found in the udder. Even when this was present the discharge of organisms might be intermittent, and might even cease for a considerable period until a fresh focus of infection appeared. Frequent and thorough inspection was the only sure method of combating tuberculous mastitis. The bulk of this inspection had to be conducted when the cows were housed; they had to be examined shortly after milking, for it was a waste of time handling udders when they were partly full. Apart from the establishment of tubercle-free herds, the best method of control was regular clinical examination. These frequent visits had also an educative value, and promoted the control of other diseases also. Bulk biological testing was a valuable accessory method. Although cows were susceptible to the toxin of diphtheria, no true cases of udder infection had been reported. Infection of the milk was usually brought about by sores on the teats being infected by some farm worker who was either suffering from the disease or was a carrier. One such case was reported by the authors from Aberdeenshire.

Among the general measures necessary to ensure a healthy milk supply, it was urged that every encouragement should be given to the production of the highest grades of milk, and that all others should be pasteurized; for this purpose the need for efficient plant was stressed. The supply of cow's milk had never been so safe as it was to-day, but its increasing use as a food, especially for school children, should increase the demand for the best grades and lead to a general, if gradual, improvement.

Calcium and Phosphorus in Milk

Dr. R. G. LINTON discussed the calcium and phosphorus supply of dairy cows, and pointed out that there was a great difference between the modern dairy cow and the cow leading a natural life, grazing at large on suitable food. Normally a cow secreted some 200 gallons of milk for the sustenance of a calf; her food would be grass and various plants which were in their most nutritious state during the normal period of maximum milk yield. The modern cow produced at least four times this amount of milk, it bred at any seasonal period, and reached maturity at an unnaturally early age. Its food was mostly unnatural, and often unsuitable, and it was often badly housed and given insufficient water. Quantitatively its total nutriment had been adequately studied; but it was only in recent years that serious attention had been paid to the need for replacing the mineral constituents drained from the body into the milk. What this amounted to was easily determined, but its significance in relation to the health and well-being of the cow was not clear. There was no definite knowledge of the actual needs of the cow in respect of calcium and phosphorus, either for its body or for milk secretion.

Tuberculosis in Swine

Mr. D. J. ANTHONY, considering some common diseases of pigs, stated that the commonest was tuberculosis, about 9 per cent. of those coming under his attention being thus infected. In the majority the infection was localized in the submaxillary lymphatic glands, and in practically every infected pig the head and throat were affected. The disease was chiefly of bovine origin, resulting from feeding on milk and milk products. This accounted for about two-thirds of the cases, the remainder suffering from avian tuberculosis. Prevention consisted in the cooking of milk foods and the elimination of tuberculous poultry.

Dr. JOHN O'CALLAGHAN of Pallasgreen, co. Limerick, died on August 4th, after an illness of nine days. He was educated at the Ledwich School, Dublin, and took the diploma of Licentiate of the Royal College of Surgeons in Ireland in 1885, in which year he became L.R.C.P.Ed.; he obtained the F.R.C.S.I. in 1898. After serving as an assistant for a short time at Hull, he was appointed to the Grean Dispensary District, Pallasgreen, co. Limerick, an appointment which he held for thirty years. Failing health caused his retirement some ten years ago. Dr. O'Callaghan was a justice of the peace for Limerick and a member of the North Munster Division of the British Medical Association.

Universities and Colleges

UNIVERSITY OF LONDON

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL

The following scholarships and prizes have been awarded:

Entrance University Scholarship: J. D. Fergusson. Hector Mackenzie Exhibition: W. G. Q. Mills. Open Scholarship in Natural Science: First Scholarship, R. R. McSwiney; Second Scholarship, A. W. Wrugg. G. A. Hart, A. G. Moore. Open Scholarship in Arts: First Scholarship, W. R. S. Doll; Second Scholarship, T. H. Clifton. William Tite Scholarship: G. W. Hearn, F. C. Durbin.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN

The following scholarships have been awarded for the session 1931-32:

St. Dunstan's Medical Exhibition: Miss Olive M. Singer. Isabel Thorne Scholarship: Miss M. M. Burton. Mrs. George M. Smith Scholarship: Miss Grace E. Reed. Bostock Scholarship: Miss Marjorie F. Landau. Mabel Sharman-Crawford Scholarship: Miss Ruth M. Addison. Dr. Margaret Todd Scholarship: Miss J. C. Goodchild. Special Dr. Margaret Todd Scholarships (two): Miss S. A. M. Herford, Miss J. G. Greenhalgh. Fanny Butler Scholarships (two): Miss M. C. Goodchild, Miss M. A. Powys. School Jubilee Bursary: Miss E. C. Randell. Alfred Langton Scholarship: Miss J. M. Cass. Flora Murray Bursary: Miss H. M. Brown. Ellen Walker Bursary: Miss Q. I. E. May. Helen Prideaux Post-Graduate Scholarships: Miss Ursula Shelley, Miss Beatrice Joly. Dr. Edith Pechey Phipson Post-Graduate Scholarships: Miss Gulbai P. Patel, Miss Beatrice Board.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—L. F. Donnan, A. K. Guha, J. W. V. Sheldon.

MEDICINE.—V. R. T. Baylis, G. B. Carter, M. Ditton, E. I. B. Hawes, S. Lokecz, L. R. C. Rose, D. N. Ryalls, E. S. St. John, J. W. V. Sheldon.

FORENSIC MEDICINE.—G. B. Carter, H. W. Davies, B. Dayal, J. M. Durr, S. Lokecz, J. W. V. Sheldon.

MIDWIFERY.—O. A. P. Clark, J. M. Durr, B. N. Halder, S. E. Paterson, D. N. Ryalls, C. F. Vieira.

The diploma of the Society has been granted to Messrs. G. B. Carter, O. A. P. Clark, A. K. Guha, B. N. Halder, E. I. B. Hawes, S. Lokecz, E. S. St. John.

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel Richard Nugent Stoker, Bengal Medical Service (ret.), died at Duncaus, British Columbia, on June 14th, aged 79. He was born on October 31st, 1851, the son of Mr. Abraham Stoker of Clontarf, was educated in Dublin, in the school of the Royal College of Surgeons, and took the L.R.C.S.I. in 1873 and the L.K.Q.C.P. in 1874. Entering the I.M.S. as surgeon on September 30th, 1874, he became surgeon lieutenant-colonel after twenty years' service, and retired on April 2nd, 1900. He served in the Afghan war of 1879, receiving the medal. After the war he was appointed garrison surgeon of Fort Attock, an appointment long ago abolished, and held that post till his promotion to surgeon major in 1876, when he was posted to one of the newly raised Gurkha battalions, with which he served in the Sikkim campaign of 1888 on the North-East Frontier of India, and took part in the forcing of the Jelapla Pass, receiving the frontier medal.

Medical News

The prize distribution and conversazione at the Royal Dental Hospital, Leicester Square, W.C.2, will be held on Friday, October 2nd, at 8 p.m., when Professor Elliot Smith, F.R.S., will preside.

It is proposed to hold a reunion dinner of officers of the No. 3 British General Hospital, Mesopotamia, in London, on October 23rd. Officers of the unit interested in the matter should communicate with Dr. Andrew Topping, Town Hall, Rochdale.

The King Edward's Hospital Fund for London has arranged a river trip to Tilbury Docks on Friday, September 11th. A steam launch will leave Westminster Pier at 9.30 a.m. and arrive back about 6 p.m. There will be a visit of inspection of ss. *Orontes*, on board which a buffet lunch will be served. A representative of the Port of London Authority will accompany the party on a tour of the port and explain its organization and various activities. Tickets for the trip (£1 1s.) can be obtained at the offices of the Fund, 7, Walbrook, E.C.4.

The third annual conference of the National Smoke Abatement Society, which will be held at Liverpool from September 18th to 20th, opens with a reception by the Lord Mayor of that city on the evening of the first day. Papers will be read and discussed on the progress of the electrical grid, and on the production and use in Liverpool of the new smokeless fuel "Dryco." The programme also includes a motor tour, during which visits will be paid to housing estates, the new Clarence Dock power station, and other places of interest. Further particulars about the conference may be obtained from the Society's central offices, 23, King Street, Manchester, up to September 17th, and afterwards at the conference office, Adelphi Hotel, Liverpool.

The Fellowship of Medicine announces special courses in September. At the Hospital for Consumption and Diseases of the Chest, Brompton, the course will last from September 7th to 12th, and will occupy the whole of each day; fee £3 3s. A series of lecture-demonstrations in psychological medicine will take place on Tuesday and Saturday mornings at 11, at Bethlem Royal Hospital, Beckenham, from September 8th to October 3rd; fee £1 1s. A course on diseases in infants will take place at the Infants Hospital, Vincent Square, Westminster, from September 14th to 26th, from 2 p.m. each day; fee £3 3s. Lecture-demonstrations in ophthalmology will be held at the Central London Ophthalmic Hospital, Judd Street, W.C., from September 15th to October 8th; fee £3 3s. At the Westminster Hospital a course in general medicine and surgery, open to men only, will take place from September 14th to 26th, from 10.30 a.m. to 5.30 p.m.; fee £5 5s. for two weeks, or £3 3s. for one week. A course in general medicine and surgery, open to men and women, will be held at the Metropolitan Hospital, Kingsland Road, E., from 10.30 a.m. to 5.30 p.m. from September 28th to October 10th; fee £3 3s., or £2 2s. for either week. Copies of syllabuses of the courses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

An autumn post-graduate course on diseases of the nervous system will be held at the National Hospital from October 5th to November 27th. The general course will consist of thirty-two clinical lectures and demonstrations at 3.30 p.m. on each weekday except Wednesday and Saturday, teaching in the out-patient department on each weekday except Saturday at 2 p.m., and eight pathological lectures and demonstrations on Friday at 12 noon. The fee for the course will be £6 6s. A course of eight lectures on the anatomy and physiology of the nervous system will be arranged on Tuesdays and Thursdays at 12 noon if there are sufficient applications; fee £2 2s. A course of ten clinical demonstrations, chiefly on methods of examination of the nervous system, will be

given on Tuesdays and Thursdays at 5 p.m.; fee £2 2s. Tickets entitling to attend the out-patient clinic only may be obtained from the secretary; fee £2 2s. for three months. Applications should be addressed to the secretary, Medical School, National Hospital, Queen Square, W.C.1.

A conference on tuberculosis, organized by the Davos Medical Society, will be held from October 5th to 10th. Lectures on the development and course of the pulmonary and extra-pulmonary types and on collapse-therapy will be given. Those wishing to attend the conference should notify the President of the Society before October 1st, and those wishing to take part in the discussions, before September 20th. Excursions are being arranged. Further details may be obtained from the secretary, Davos Medical Society, Davos-Platz, Switzerland.

A special post-graduate course in the pathology of digestive processes will be held in the Hospital de la Santa Cruz at Barcelona, from October 23rd until the middle of December. The subjects dealt with will include the examination of gastric juices, intestinal secretions, and faeces; congenital anomalies of the alimentary canal; the diagnosis and treatment of gastric dyspepsia, ulcers, and malignant growths; the pathology and therapeutics of cirrhosis, constipation, and pancreatic disease; applied radiology; and disorders of the spleen, liver, and appendix. Therapeutic demonstrations will be given of the various diagnostic and therapeutic procedures employed. Further information may be obtained from the director of the hospital, Professor F. Gallart Monés.

The second International Congress on the Rat and Plague will be held in Paris from October 7th to 12th. Further information can be obtained from the general secretary, Professor Gabriel Petit, 84 bis, Rue de Picpus, Paris XIIe.

The second International Congress of Comparative Pathology will be held in Paris at the Faculty of Medicine from October 14th to 18th; Professor Charles Achard will preside. The subjects for discussion include B.C.G. immunization; Brucella infections in man and animals; mineral salt deficiencies in man and animals; the distribution of the ultra-virus agencies, and the diseases attributable to them; and helminthic infections. The congress is open to medical and veterinary practitioners and those interested in the diseases of plants. Further information may be obtained from the general secretary, 7, Rue Gustave Nadaud, Paris, XVI.

The King has granted permission to Dr. Douglas Erith Derry, M.C., to wear the Insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt. Dr. Salvatore Michael Vassallo, F.R.C.S., has also received licence and authority to wear the Insignia of the Fourth Class of the Order of the Brilliant Star of Zanzibar conferred upon him by the Sultan of Zanzibar. The *London Gazette* also announces that the King granted his Royal licence and authority to Dr. Theodore Dyke Acland to wear the Insignia of the Second Class of the Order of the Nile conferred upon him by the King of Egypt. (Dr. Acland died on April 16th last.)

Professor W. D. Halliburton, M.D., F.R.S., who died on May 21st, has bequeathed, on the death of his wife, £10,000 to King's College, University of London, for endowment, or towards the salary of a professor in the subject of physiology or the sciences relating thereto. He leaves, also, £300 to his medical attendant "as a small recompense for his faithful and untiring service."

The lecture on eugenics which Colonel C. J. Bond, C.M.G., delivered as an introduction to the Sims Woodhead course of lectures last February, under the auspices of the People's League of Health, has now been published in pamphlet form, and can be obtained from the offices of the League, 12, Stratford Place, London, W.1.

William Heinemann (Medical Books) Ltd. announce for publication this autumn a book by Dr. Bendien, entitled *Specific Changes in the Blood Serum*, translated by Dr. A. Piney.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

The Plural of Os Calcis

Dr. KENNETH ANDERSON (Banwell, Somerset) writes: Can any classical scholar state the correct plural of os calcis? Mr. P. B. Roth, in his article on prominent heel, gives it as os calces, which scarcely seems to be right. Should it not be ossa calcis?

Treatment of Threadworms

"F." writes: Suggestions will be welcomed for the treatment of an obstinate case of threadworms in a female child of 8 years of age. The condition has persisted for nearly three years, and treatments have included enemata of salt, quassia, powders containing santonin, calomel, pulv. scammony co. by the mouth, and white precipitate ointment applied to the anus. Each time, after a vigorous course of treatment, the worms seem to disappear from the stools, only to be found in thousands after about a month or two. The child is well in health, and has grown well and put on weight during the years.

(?) A Female Bleeder

"F. F." writes: A girl, aged 11, about six years ago had an attack of epistaxis, which was most persistent, and lasted for some time. Since then she has shown all the symptoms of being a "bleeder," any slight contusion being followed by extensive extravasation in the subcutaneous tissues. There is no history on either the father's or mother's side. Her general health has not been affected, and her growth has been normal. About six months ago menstruation started—not excessive, but it has never wholly stopped. During the last week, however, she has complained of pain, and has passed clots. In spite of the loss, she shows no signs of anaemia or pallor, but remains a good colour and appears otherwise well. So far the only treatment given has been calcium lactate, as there have been no urgent symptoms. I should be pleased of any advice in this case—first, as to treatment, and, secondly, as to prognosis, which I look upon as very grave. Also, as to how long the beneficial results of the use of haemoplastin, adrenaline, and pituitrin would be likely to last.

Effect of Prolonged Injections of Insulin on Subcutaneous Tissue

Dr. HAROLD AVERY writes: In my article on this subject, to which you refer (August 8th, p. 282), I brought forward the fact that subcutaneous fat atrophy occurs in drug addicts at the point of injection, as evidence that this condition is non-specific and traumatic in origin. Injury to the cell envelope releases fat globules which, acting as foreign bodies, result in the formation of histiocytes with lipophagic activity. Complete recovery occurs in some cases. I have also seen this fat atrophy occurring in asthmatics who have been using adrenaline or ephedrine subcutaneously and frequently.