The harmless condition of a dilated pupil which reacts abnormally slowly (myoticonic) to light and convergence was fully described in 1931 by William John Adie (1886–1935),1 of the National Hospital, Queen Square:

Wishing to draw attention to a benign symptomless disorder characterised by pupils which react on accommodation but not to light, and by absent tendon reflexes. Five of the six cases I am about to describe came under my notice in the course of a few weeks: "Though harmless in itself it merits recognition because it is often mistaken for a manifestation of syphilis of the nervous system, with unfortunate consequences... Dr Foster Moore has described seven cases under the title 'Non-idiopathic Argyll Robertson pupil'.

Usually seen in females, in 80% cases it is unilateral. Adie was not the first to observe this uncommon curiosity and its variant manifestations. In 1818 the London ophthalmologist James Ware (1758–1813) described a patient who may have had a myoticonic pupil. His patient whose pupillary abnormality had been known for twenty years was:

A lady between thirty and forty years of age, the pupil of whose right eye, when she is not engaged in reading, or in working with her needle, is always dilated very nearly to the rim of the cornea; but whenever she looks at a small object, nine inches from the eye, it contracts, within less than a minute, to a size nearly as small as the head of a pin. Her left pupil is not affected like the right; but in every degree of light and distance, it is contracted rather more than is usual in other persons. Several instances have come under my notice, in which the pupil of one eye has become dilated to a great degree, and has been incapable of contracting on an increase of light, as described 22 patients, with absent tendon reflexes, and noted 44 reported cases of tonic pupil in nine of which there were absent tendon reflexes. In this account he outlined four incomplete forms (the last would not now be accepted):

1. The complete form—typical tonic pupil and absence of reflexes.
2. Incomplete forms: a) tonic pupil alone; b) atypical phase of the tonic pupil alone (omphaloplegia; c) atypical phases of the tonic pupil with absent reflexes; d) absent reflexes alone.

At about the same time, Gordon Holmes found 19 patients with the myoticonic pupils, characterised in his Introduction to Clinical Neurology:

"By very slow contraction on convergence, and even slower relaxation. The reflex to light is often lost too. One or both eyes may be affected.

Adie's 1931 paper described it and its association with symptoms of other diseases of the nervous system:

Frequently no change in the size of the pupil was visible immediately on convergence, but when this was maintained for a few seconds the pupil slowly and gradually grew smaller, till its diameter equalled or was even narrower than that of the normal eye. The rate of contraction varied very much... When contracted the pupil remains constant and when convergence is relaxed it dilates slowly. In the present state of our knowledge a separation of those cases in which the tendon jars are absent from those in which they persist is unjustifiable... the similarity of the symptoms in all these cases naturally suggests a common aetiology."

Edwin Bramwell linked Holmes's name with Adie's in 1936. The brilliant George Brody mistakenly pointed to the 'peculiarity' that Morgan, Symonds, Holmes and Adie all published at about the same time, in different journals without referring to each other, yet they knew each other well at Queen Square. However Adie's second paper (1932) did mention Holmes's work.

The credit must be Adie's for stressing its harmless nature and crucially by distinguishing it from neurosyphilis. Adie did not claim originality, recognising several earlier accounts. He acknowledged that Morgan and Symonds had recorded:

In Guy's Hospital Reports for 1927 Drs. Symonds and I drew attention to a small
group of cases in which certain abnormalities of the pupil, including inequality and defective reaction to light and convergence, and also some affection of accommodation, were associated with a pathological absence or diminution of the tendon-jerks.\textsuperscript{11}

It was previously confused with the Argyll Robertson pupil associated with optic atrophies dorsalis or General Paralysis of the Insane, characterized by: a loss of both direct and consensual light reflexes; pupillary inequality; irregularity and iris atrophy without reaction to light. Adie clearly distinguished this from his myotonic (Pseudo-Argyll Robertson) pupil.

Since Adie's descriptions,\textsuperscript{12,13} this conception of an atypical tonic pupil has been widened,\textsuperscript{14} which unnecessarily complicates a diagnosis which is secure if clinical observations are precisely observed.

Pathogenesis
Stanley Gravesson (1915-1976) studied 15 patients, three men, 12 women, aged 12 to 75.\textsuperscript{15} He set out to illuminate: (1) the site of the anatomical lesion and (2) the nature and specificity, or otherwise, of the underlying pathological process. Two types of tonic pupil were distinguished, (a) the fixed type, and (b) the ordinary type of tonic pupil. The only common features of this latter variety are (1) their regularity of shape or position of the pupil and (2) the slowness of pupillary dilatation after convergence. Gravesson pointed out that the lesion had to be on the efferent limb of the light reflex arc, to account for the absence of a light response in a unilaterally tonic pupil with a simultaneous brisk consensual response in the normal pupil. The prompt reaction of the pupil to pilocarpine meant that the muscle of the iris could not be at fault.

REFERENCES
3. Warlow J. Observations relative to the near and distant state of different pupils. Phil Tr Roy Soc London \textsuperscript{17}1811;103:368-8.