tissue surrounded these abscesses, and they were, I think, of pyæmic origin, for between the lungs and diaphragm, on the right side, were three abscesses. Both lungs were much collapsed from pressure and carnified. There was general pleurisy of costal and pulmonary membrane, the entire chest being affected, and also the pericardial sac. Both chests contained a quantity of turbid fluid.

Remarks. (1) This is a somewhat singular case, owing to the chest sounds. I can offer no explanation of the observed phenomena. (2) I have recorded the case as one of nearly pure pleurisy; again exception may be taken to this on account of the abscesses in the lungs, but I think these were secondary, and due to infection from the diaphragm abscesses, for there were none of the ordinary appearances of pneumonia present. On this point the remarks made in previous cases apply. (3) It is curious to observe how commonly relapse follows about the end of a week, especially in those cases which appear to be doing quite satisfactorily; these symptoms are most misleading, and should not throw us off our guard or induce a hasty prognosis.

SOME INQUIRIES CONCERNING THE LATHYRUS SATIVUS.¹

By JOHN B. WOLSTENHOLME, F.R.C.V.S., F.R.M.S.

IT is noticeable in veterinary and medical literature that this legume is at one time referred to as a "pea," and at another as a "vetch," and then again as "these peas, or vetches, to give them their proper title." This seeming ambiguity has induced me to have some fifty plants reared in a good garden in the country, and to refer to several works and papers on the subject. It is the results of these inquiries I wish to bring forward.

In this country in the corn trade the seeds of the *lathyrus sativus* are known as "mutters." They vary much in colour, being grey, yellow, light brown, dark brown, or nearly black. They are irregular in shape, being compressed and angular, and vary in size; on the average six placed in apposition measure 1 inch. *Lathyrus sativus*, the Linnæan name, is the scientific one adopted in France, Holland, and this country. Louden gives chickling vetch as the common British name. Gesse is the French name for the genus *lathyrus*, and *gesse cultivée* the name of this particular species (Lamarck). Parkes gives *kassaree-dholl* as the name by which it is known in India.

Bentham, in his "British Flora," p. 131, uses the term pea as synonymous with *lathyrus* in his heading of the genus. He also says:—"The pea of our kitchen-gardens and fields is usually distinguished as a genus under the name of *pisum*, but upon characters which are hardly sufficient for the separation of a solitary species." At p. 127, speaking now of vetches, he says:—"The tendrils distinguish it from all our leguminous plants, except the following genus pea, from which it is absolutely separated, chiefly by the style." With Bentham, therefore, a *lathyrus* is a pea.

¹ A communication with specimens to the Lancashire Veterinary Medical Association, 30th September 1897.

Hooker, in his "Flora of the British Isles," divides the sub-order papilionaceæ into six tribes, one of which he names viciæ, which is the Latin equivalent of vetches. This tribe includes all the leguminosæ with tendrils; he then, like Bentham, divides it into the two genera, vicia—vetch, and lathyrus—pea. He ignores a genus pisum, including any so-called with the lathyri.

Bentham describes ten species of vetches and ten species of lathyri, as growing naturally in the British Islands. Hooker describes sixteen of vetches and twelve of lathyri; neither includes the lathyrus sativus.

Lamarck, a French botanist, writing in 1778, divides the leguminous plants with tendrils into two genera—as Hooker and Bentham have done later—using the Linnæan names vicia and lathyrus, with the French equivalents of vesce and gesse. He further says:—"I know no character sufficient to establish a generic distinction between the lathyri and the peas." Lamarck describes thirteen species of vetches and seventeen species of lathyri as growing naturally in France. Amongst the latter is included the lathyrus sativus, a point I wish to draw attention to, as Loudon, p. 620, designates it as indigenous to Southern Europe.

Loudon in the "Encyclopædia of Plants," divides the leguminous plants with tendrils into three genera, viz.:—Vicia, with thirty-eight species; lathyrus, with thirty species; pisum, with three species.

It will thus be seen that a lathyrus is *not* a vetch, and, further, that, according to Lamarck, Hooker, and Bentham, the term lathyrus includes that small number of species which some detach from the lathyri to constitute the genus pisum. I have quoted from Loudon the name of chickling vetch as applying to the lathyrus sativus. It will be necessary to avoid the term vetch, it being most misleading when used in the popular or non-scientific sense, for a number so named do not belong to the genus vicia at all, as—

Chickling vetch	Lathyrus sativus
Bitter vetch	The old genus orobus
Yellow vetchling	Lathyrus Aphaca
Milk vetch	Astragalus glycyphylus
Kidney vetch	Anthyllus vulneraria.

The following is a description of the plant reared for me from mutters in a rich garden soil:—

Lathyrus sativus, a climbing, branched, glabrous annual, with winged stems, 2 to 3 feet high. Stipules large, lanceolate, half sagittate. Leaf-stalk, flattened and winged, ending in a branched tendril; the stalk bears a pair of long—about $2\frac{1}{4}$ inches—lanceolate leaflets, three to five nerved. Peduncles axillary, about 2 inches long, bearing a single flower. Flower, standard blue, becoming purple to red as the centre of the flower is approached. Keel pale pink or white. The standard is large, $\frac{1}{2}$ to $\frac{5}{8}$ inch in width, rounded, emarginate at the centre, and revolute. The style is flattened below the stigma, quite glabrous on the outer side, but downy on the inner face for a considerable distance below the stigma. The pod is ovate, 1 inch to $1\frac{1}{4}$ inch long, flattened, and with a double edge at the long axis of the back, *i.e.*, that border to which the seeds are attached. The usual number of seeds is three or four, but I have noticed five. As before described, they are small, varying in size, six measuring 1 inch, compressed and

angular. Colour, various—grey, dirty yellow, light brown, dark brown and nearly black.

Louden thus describes the *lathyrus sativus*, chickling vetch. A deciduous climber, annual. Height 3 feet; flowers June, July; colour light blue. Peduncles one-flowered. Tendrils two and four-leaved. Pods ovate, compressed, with two edges at the back.

Native country, Southern Europe. Introduced into England, 1640.

Lamarck, p. 574, very clearly describes the plant and varieties as *gesse cultivée*.

Lathyrus sativus, Lin. Sp. 1030.

Lathyrus sativus flore fructuque albo, Tournef, 393.

β *Lathyrus sativus flore purpureo*, *ibid.*

Lathyrus cicera, Lin. Sp. 1030.

He says that the seeds are eaten as peas.

Lamarck just as clearly describes the common pea as a *lathyrus*, thus :—

Gesse potagère.

Lathyrus oleraceus.

Pois des jardins.

Pisum sativum, Lin. Sp. 1026.

β *Pisum arvense, fructo albo*, Tournef, 394.

Pois des champs.

Bouillet's "Dictionnaire des Sciences," etc., p. 762, describes *lathyrus* as a genus of the *papilionaceæ* of the tribe *vicia*. The *lathyrus sativus* is known by the French names of *la gesse cultivée* ou *domestique*, *pois breton*, *pois carré*, ou *lentille d'Espagne*. He further states that the seeds are eaten by people as boiled vegetables, and in soup also, and that it furnishes excellent forage for cattle.

I will now give some interesting details culled from Parkes and Loudon :—

Parkes' "Practical Hygiene," Edition 1883, page 252, says "In India the use of a vetch *lathyrus sativus* (*kassaree-dholl*) with barley or wheat gives rise to a special paralysis of the legs when it exceeds one-twelfth part of the flour; *lathyrus cicera* has the same effect."

Dr Irvine ("Indian Annals," January 1868) described the symptoms produced by the *kassaree-dholl* or *lathyrus*. The first symptoms are gastro-intestinal irritation, and the paraplegia followed on this. Page 256, "*lathyrus sativus* (*kassaree-dholl* of India), occasionally in Europe, and constantly in some parts of India, this vetch has been used when mixed with wheat or barley flour for bread. When used in too great quantities it produces (without there being necessarily any alteration of the grain?) constipation, colic, and some form of indigestion, and, if eaten in large quantity, paraplegia. It is also injurious to horses, but less so to oxen. In Bengal Dr Irvine ('Indian Annals,' 1857, *ibid.*, January 1868, page 89) notices the resemblance of the symptoms to the *Barbières* of *Boutius*, and found in some villages no less than 10 to 15 per cent. of the people paralytic from this cause."

In Loudon's "Encyclopædia of Plants," p. 620, is the following :—"*Lathyrus*, a name employed by Theophrastus, to designate a leguminous plant. It is said by his commentator, Bodeus a Stapel, to have been derived from an augmentative principal, and '*θωπος*,' anything

which is exciting, and to have been applied to this plant in consequence of certain aphrodisiacal qualities ascribed to it."

Lathyrus sativus (gesse, French) is frequently sown in Switzerland for *soiling* horses. In several parts of the Continent a white, light, pleasant bread is made from the flour of this pulse, but it produced such dreadful effects in the last century that the use of it was forbidden by an edict of George, Duke of Wurtemberg, in 1671, and this not being observed was enforced by two other edicts under his successor Leopold, in 1705 and 1714. Mixed with wheat flour in half the quantity it makes a very good bread that appears to be harmless. But bread made with this flour only has brought on a most surprising rigidity of the limbs in those who have used it for a continuance, inasmuch that the exterior muscles could not by any means be reduced, or have their natural action restored. *These symptoms usually appeared on a sudden*, without any previous pain, but sometimes they were preceded by a weakness and disagreeable sensation about the knees. Baths, both hot and cold, fomentations, and ointments of various kinds have been tried without effect, inasmuch that it is regarded as incurable, and, being neither very painful nor fatal, those who are seized with it usually submit with patience.

Swine fattened with this meal lost the use of their limbs, but grew very fat lying on the ground. A horse fed some months on the dried herb was said to have his legs perfectly rigid. Kine are reported to grow lean on it, but sheep not to be affected. Pigeons, especially young ones, lose the power of walking by feeding on this seed. Poultry will not readily touch it, but geese eat it without any apparent damage.

In some parts of Switzerland cattle feed on the herb without any harm. It would be worth inquiring, therefore, whether the soil may not contribute something to the ill qualities of the plants, and it is remarked that the seed from a strong, fat, moist soil is much more deleterious than from a light dry one (Duvernoy).

Fabbroni from Florence, in 1786, says that the government here has cautioned the peasants against the use of *lathyrus sativus*, swine having lost the use of their limbs, and become pitiable monsters by being fed exclusively on this pulse. The peasants, however, eat it boiled or mixed with wheaten flour in the quantity of $\frac{1}{4}$ without any harm.

The poisonous *lathyrus* from Barbary is *lathyrus semine punctato* of casp. baubin, and seems only to be a variety, for in the crops of *lathyrus sativus* in Italy they find black seeds striped with white, as in the African seed. Fabbroni suspects it to be a mule between *lathyrus sativus* and *cicera*, for the flower and seed partake of the characters of both, having a black seed marked with white, and a white banner with a red keel to the corolla.

I append references of published papers as follows:—

"Cases of *Lathyrus* Poisoning," by Joseph Leather & Sons—*Veterinarian*, April 1885. Lectures by Principal M'Call: "Poisoning of Horses by the *Lathyrus Sativus*"—*Veterinarian*, 1886, page 789. "The Bristol Tramways Company's Case"—see *Bristol Mercury*, 5th July 1894. "Laboratory Notes," Professor Bayne—*Veterinarian*, 1894, pages 450-531, and 624. "Vetch Poisoning," by Joseph Abson—*Veterinarian*, 1894, page 754. "*Lathyrus* Poisoning," by R. F. Wall—*Veterinarian*, 1896, page 587.