potent cause," the ebb and flow of inflammation, will be found adequate to explain the symptoms without the interposition of direct motor causes. Moreover, he will no longer fear the Greeks, even when bearing a question about pain-relief from haemorrhage, for he will be able to discard "muscular atony from acute anaemia" as an unsatisfactory explanation, either in peptic ulcer or congestive dysmenorrhoea. Such prostration, as is implied, does not necessarily accompany pain-relief.

Finally, if he leaves out the myogenic middle term, he will not be called upon to explain how nebulous motor disturbances can directly cause pain in ulcer patients, while definite and violent motor disturbances fail to cause pain in obstructive or regurgitant vomiting after gastro-enterostomy, or in obstruction at the duodeno-jejunal flexure due to carcinoma. Nor will he be asked to explain why, in pyloric obstruction, "the very powerful peristaltic waves which can be seen through the abdominal wall are rarely accompanied by any discomfort" (Hurst and Stewart).—I am, etc..

Sydney, Australia.

V. J. KINSELLA.

Acute Intussusception in Childhood

SIR,—I read the article on acute intussusception in childhood by Drs. Brenda Morrison and Donald Court (April 24, p. 776) and letters in subsequent issues. The authors of the article state that it is very difficult to satisfactorily examine a healthy baby. With this I cordially agree, and it is particularly difficult during the contractions of the intussusception (when it is hard and most palpable) because then the baby yells most lustily. It is at this stage that, barring accidents, 100% of the babies should be saved.

There is only one way by which one can make absolutely certain that an intussusception is or is not present—that is by a bimanual exploration with the right forefinger in the rectum, under anaesthesia. Quite light anaesthesia is sufficient and chloroform the best anaesthetic. If the case is in hospital the child can be examined in the theatre and either the abdomen opened or the surgeon retire with a perfectly easy mind. The authors of the article and subsequent correspondents make no mention of this method. By carrying it out one can explore every part of the abdomen in a child under 2 years.—I am, etc..

Great Yarmouth.

LEONARD LEY.

SIR,—May I add a further point to Drs. Brenda Morrison and Donald Court's timely article (April 24, p. 776) calling for earlier diagnosis in acute intussusception in children? Under the heading "Signs in the Abdomen" insufficient stress is given to palpation of the abdomen. In the initial stage of the condition, and before obstruction and peritonitis have occurred, the mass is only palpable during active peristalsis, and it may be necessary to palpate the abdomen several times before a clear and unmistakable cylindrical tumour is felt. Usually colic occurs at that instant, but it may not be severe. Only by repeated palpation in the early stages, when vomiting and flexion of the thighs or the abdomen are the presenting signs, will the initial and pre-inflammatory stage of intussusception be diagnosed.

Mention is made in the article to the similarity in description in most British textbooks, and I would refer the authors of the article to that given in the 4th and 5th editions of the textbook on paediatrics published by Messrs. E. and S. Livingstone.—I am, etc..

London, W.1.

BRUCE WILLIAMSON.

Pain in Phantom Limbs

SIR,—I was very interested in Dr. J. Donaldson Craig's letter (May 8, p. 904) on "Pain in Phantom Limbs." The subject of painful stumps is a difficult one. As a medical student I do not remember a single instance of my teachers telling me anything about the subject; and as to the question of phantom limbs the paucity of the literature concerning this distressing condition speaks for itself. Space does not permit of my dealing with painful stumps and I will therefore only briefly discuss my views on phantom limbs.

In the intact body there is a continuous stream of impulses bombarding the cortex from the sensory nerve endings in the muscles of

the body. This bombardment is evenly balanced on both sides and in a state of equilibrium. When a limb is amputated a neuromuscular imbalance immediately results (see diagram). This will play a great part in future motor activity of the individual and will influence his phantom limb.

It is the readjustment of the remaining muscles of the body to the altered state which now throws additional strain on the sensitized cerebrum and makes the previously existing state of equilibrium so liable to be upset. It is the constant effort of the central activity to maintain this equilibrium between the continuous stream of impulses from the remaining part of the body which makes a phantom limb an ever-present possibility and brings the awareness of the absent member to consciousness.

The capacity of the individual's sensorium to readjust itself to the new conditions of his body and its new environment after an amputation may or may not give rise to the varied manifestations of a phantom limb. The physical alterations and mental fluctuations in his subsequent life will act as stimuli and as predisposing factors to cause a central release which will result in pain in the phantom. All amputations are associated in the mind of the individual with a varying degree of pain. This is not dependent on whether pain has preceded the amputation. Further, the individual will react to this pain according to the degree of sub-conscious pain which already exists in his sensorium, and this phantom pain will be further modified according to his level in the phylogenetic scale. It has been noticed that highly intelligent, sensitive patients are more prone to phantom pain than the more plethoric, unimaginative individuals.

It has been observed that wearing an artificial limb is often a comfort to the patient with a phantom pain, and tight bandaging at night, when his phantom pain becomes aggravated, relieves this pain. In fact, many individuals often hold on firmly to their stumps with both hands in order to relieve the pain. This pressure has the effect of restoring temporarily the balance of the impulses which impinge on the sensorium and so relieves the pain. These observations influence treatment. The patient himself often doubts the reality of his own sensations. Fear of accusation of insanity makes him reticent to talk about his symptoms and he prefers to hide them until he can no longer bear them. This may result in gross mental disturbance, and the sufferer of a phantom limb is often regarded as psychotic.

The patient who shows the slightest indication of phantom pains should be told that we believe he gets these pains—that they are very real to him; and, since he has lost his limb, from his point of view there is no foundation for the stimulus now. Eventually the pains will cease, which indeed they often do.

I agree with the statements that all the operative measures on these conditions usually fail, and I would like to point out that local injections are of very fleeting value. A simple and effective method of treatment by firm bandaging of the stump bears out the hypothesis which I have postulated above: "Sensation removed by amputation must be replaced by further sensation." I would further like to say that phantom limbs are not analogous to causalgia. Amputations of the fingers are not infrequently accompanied by causalgic pains, while phantom pains are rare in fingers because there has been no loss of bulk stimuli. Causalgic pains are not relieved by pressure: phantom pains are.—I am, etc..

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Diagram showing (a) imbalance produced by amputation, and (b) normal state of equilibrium.