apparatus of breathing, and "mismatch" no more than that at least one ventilatory variable is outside the normal range of values. In other words, the subject or patient is unhealthy. To say that in all cases of dyspnoea there is "length-tension inappropriateness" or "mismatch" is to say little more than that dyspnoea is a symptom of ill-health. Conversely, identification of "length-tension inappropriateness" or of "mismatch" is not diagnostic of ill-health. An inspiratory effort against a closed glottis is an example of extreme "length-tension inappropriateness," and voluntary hyperventilation an example of extreme "mismatch" between ventilation and lung perfusion, but neither condition need cause breathlessness or dyspnoea.

But the main criticism of these expressions is not a semantic one. It is that they are in danger of hampering our understanding and investigation of the physiology of breathlessness. We need to measure the factors associated with breathlessness and dyspnoea; yet there are no units of inappropriateness or mismatch (how about the "Odd"?), and therefore no way of assessing their contribution to respiratory sensation. The reason that we do not understand the cause of dyspnoea is that we cannot yet measure all the variables, or determine their interrelationships, which underlie respiratory sensation. The length-tension relationships of respiratory muscles could be measured, and also many of the ventilatory variables, which may be matched or not; but other factors, such as afferent nervous activity and psychological influences, defy quantitative analysis. In the meantime the use of "length-tension inappropriateness" and "mismatch" may delude us into thinking that we understand a process because we can label it. Both expressions are more appropriate as the jargon of marriage guidance counsellors than as that of medical scientists.—I am, etc.,

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## Massive Overdose of Adrenaline

SIR,—I would like to question the use of trimetaphan camsylate (Arfonad) in the treatment of adrenaline overdosage as reported by Dr. M. A. Lewis (7 October 1967, p. 38) and supported by Dr. B. J. Freedman (21 October 1967, p. 171). Trimetaphan camsylate is a rapidly acting antihypertensive agent which acts predominantly by ganglionic blockade and may actually increase pressor responses to catecholamines. The treatment of choice is surely the use of specific alpha and beta blocking agents such as phentolamine (Rogitine) and propranolol (Inderal). In individuals with normal hearts the provision of alpha blockade is particularly important. In the case described by Dr. Lewis it is likely that the use of phentolamine was the important therapeutic procedure. The use of combined alpha and beta blocking agents has recently been reported to be effective in the treatment of phaeochromocytoma,[1] which is a naturally occurring model for therapeutic overdosage with catecholamines.—I am, etc.,

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REFERENCE
1 Crago, R. M., Eckholdt, J. W., and Wiswell, J. G., *J. Amer. med. Ass.*, 1967, 202, 870.

## Nail-gun and Masonry Nail Accidents

SIR,—The current resurgence of reports of serious injury from industrial nail-guns (30 December, p. 784, and 20 January, p. 181) reminds me that it is exactly six years since the danger of these tools was first stressed in these columns.[1-3] Colleagues have since told me of their own experiences of such injuries, which are clearly far from rare. The real point is that lethal industrial nail-guns still require no licence, can still be used by any untrained, careless, or irresponsible workman, may still lack foolproof safety attachments, and have seemingly aroused no interest among our legislators. Having regard to the proposition that crash-helmet and car safety-belt regulations (for example) would not exist but for medical advocacy, I urge all doctors concerned by the problem to combine their data and forces to lobby Members of Parliament so that an appropriate Bill is formulated before further tragedies accrue from this preventable hazard of modern life.—I am, etc.,

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REFERENCES
1 Klenerman, L., *Brit. med. J.*, 1961, 2, 1785.
2 Oldfield, M. C., ibid., 1962, 1, 262.
3 Wilson, P. J. E., ibid., 1962, 1, 341.

SIR,—May I add to your list of nail-gun accidents (30 December, p. 784, and 20 January, p. 181) four cases of injury using the so-called masonry nail but not in a gun? The nails may be driven into masonry with a hammer, and, unless struck absolutely vertically, they are easily fractured and the broken piece rebounds with tremendous force.

*Case 1.*—A plumber was driving a masonry nail into a concrete block when the nail fractured and he was struck in the right eye by the broken piece. This entered the eye at the limbus and actually punched a quarter segment out of the lens, the remains of which were left in situ. Portions of iris and vitreous lay on the cheek, and the end of the piece of nail could be clearly seen. The eye was removed and a one-inch (2.5 cm.) length of a one-eighth-inch (0.3 cm.) nail was recovered from it.

*Case 2.*—A masonry nail broke while a do-it-yourself worker was driving it into a wall. The broken fragment rebounded and shattered the left lens of his spectacles, which were fortunately a strong plus correction. Apart from a few fragments of glass on the cornea, the eye was not injured.

*Case 3.*—A builder was using masonry nails in the course of his work when a fractured piece struck him in the left eye, causing a complete hyphema. When this had absorbed a tear in the iris could be seen. The eye did not recover normal visual acuity.

*Case 4.*—On Christmas eve a workman was fixing a shelf in his house when a masonry nail rebounded and struck him in the left eye. The cornea was ruptured from limbus to limbus across the lower one-third. The eye was bleeding profusely from the anterior chamber, but there was no evidence of an intraocular foreign body. Owing to the jagged edges of the laceration it was not possible to effect a satisfactory repair, so a thick conjunctival flap was fashioned from below and secured over the injury with four mattress sutures. There was no resolution, and no perception of light. The anterior chamber was still full of blood, and, as it was likely that the torn iris was incarcerated in the wound, the eye was removed.

This collection of four cases in 12 months in a small non-industrial society (population 46,000) emphasizes the grave dangers of the masonry nail both in the hands of the professional and in those of the do-it-yourself worker.—I am, etc.,

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## Infantile Enteritis

SIR,—Your leading article and the preliminary communication by Dr. E. S. Anderson (3 February, pp. 263 and 293) on the recent outbreak of infantile enteritis on Teesside prompt me to describe a small investigation which we carried out last year in a Dublin children's hospital. The investigation was made because, in 1966, we had isolated multiresistant R+ *E. coli* from a large number of infants in this hospital.[1] We did not know if these R+ strains had been acquired in the hospital. Therefore we selected 22 infants who had faeces in their napkins on arrival at the hospital and no recent history of diarrhoea. Faecal swabs were taken in the admission unit to ensure that the bacteria we isolated from the swabs were not acquired in the hospital. Faecal swabs were obtained at one- or two-day intervals until the infants were discharged.

We found no *E. coli* of known enteropathogenic serotypes; all resistant strains carried transmissible R factors. The results of culture of the admission swabs are given below.

| No. of admission swabs | No. without R+ *E. coli* | No. with R+ *E. coli* |
|---|---|---|
| 22 | 7 (32%) | 15 (68%) |

| Resistance patterns | No. with each pattern |
|---|---|
| A S T C N | 8 |
| A S T C | 3 |
| A S T N | 1 |
| A S T | 1 |
| A T C | 1 |
| S T | 1 |

A = ampicillin resistance
S = streptomycin „
T = tetracycline „
C = chloramphenicol „
N = neomycin „

Fifteen of the 22 infants (68%) excreted resistant R+ *E. coli*. Nine of the 22 were admitted from other hospitals and these included 7 excreting resistant strains. Of 13 admitted direct from their own homes, 8 were excreting R+ *E. coli*; exclusion of children who had recently been in hospital or who had had antibiotic therapy left only 9 children whose intestinal flora might be expected to be normal. Of these, 6 were excreting R+ *E. coli*. During their stay in hospital all 22 infants at some time excreted multiple resistant R+ strains, some of them, presumably, acquired in the hospital. A majority (86%) of faecal specimens from children in three of the wards which housed some of our 22 children yielded R+ *E. coli* strains. The fact that multiresistant R+ *E. coli* were excreted by 6 out of 9 infants with no previous history of hospitalization or antibacterial therapy indicates that R factors are