subsequent injections. But arbitrary methods of defining and grading reactions, based on parental observations and opinions, and the absence of control groups do not allow for separation of specific from background reactions. Persistent screaming and collapse occur, but their true incidence is not known.

Severe and permanent adverse effects of pertussis vaccines have recently become the subject of public concern. One source claims that between 60 and 80 children acquire permanent brain damage each year as a result of pertussis vaccination. This somewhat crude estimate is not supported by any information on actual cases and greatly exceeds the numbers reported to the authorities. Rarely are fully documented cases reported in British journals, possibly because of difficulties in clearly establishing a cause-and-effect relationship. Similarly, there is a reluctance to report medical calamities of definitely established pathogenesis occurring by chance soon after pertussis immunization. Recently an account was given by Kulenkampff et al. of 36 children seen at the Hospital for Sick Children over a period of 11 years and believed to have suffered neurological complications of pertussis inoculation. Kulenkampff et al. did not think that most of the cases they saw—usually months or years after the acute episode—represented a chance association with vaccination because of the clustering of illness in the 7 days, and particularly in the first 24 hours, after inoculation. Most of these children had had convulsive episodes within days of vaccination, leaving many mentally retarded or suffering from epilepsy or both.

Could the connexion be fortuitous? The incidence of first convulsions in children in the age range given pertussis vaccination is about 1 per 100,000 children a day and, with an uptake of 2 million doses of vaccine a year, convulsions occurring by chance after vaccination can be expected. A recently reported survey has shown that the incidence of sudden unexpected deaths in which necropsy failed to reveal any major disease was 2·78 per 1,000 live births, a figure in remarkable accord with estimates from four other sources. Half the deaths occurred in children between 2 and 6 months of age and a sixth in children 7 to 12 months of age, giving a risk rate of 11 and 4 deaths respectively per million children per day. Thus instances of a sudden unexpected death fortuitously occurring within a few days of pertussis vaccination can be expected. These considerations merely highlight the difficulties experienced in discerning between vaccine-attributable and chance-associated reactions in infants given vaccine on three or four separate occasions.

There is, however, general agreement that pertussis vaccine can give rise to neurological complications in definable high risk groups of children. They include children with existing disorders of the central nervous system, a history of convulsions, or a family history of convulsions. In view of the current low incidence of whooping cough, those children should not be vaccinated. It would also be judicious to postpone vaccination of a child who is temporarily unwell.

Routine vaccination cannot be recommended unless the benefits derived from it clearly outweigh its disadvantages. The Joint Committee on Vaccination and Immunization is of the opinion that, on present evidence, vaccination against whooping cough is still a valuable health measure and should continue. But the evidence on the efficacy and safety of pertussis is blurred and open to conflicting interpretations. Recent publicity has added a new dimension to the drawbacks—parental anxiety over the possible damaging effects of this vaccine. Practitioners and medical officers, caught unprepared by the publicity, have lost some of their enthusiasm for promoting pertussis vaccination, especially in view of the difficulties in interpreting available data on safety and efficacy.

Pertussis vaccine has been administered to more than 75% of children in recent years but in future the vaccination rate is likely to be substantially less. This may not affect notification rates for the next three or four years, but whether the low vaccination rates will result in the re-establishment of a substantial pool of children susceptible to whooping cough and a resurgence of epidemics is uncertain. Meanwhile, the Joint Committee intends to assess the degree of hazard which whooping cough continues to present and to review information on the risks of immunization. Consideration could perhaps be given to whether a two-dose schedule of diphtheria-tetanus-pertussis immunization, as recommended in New Zealand, is an acceptable alternative to the current three-dose schedule, and to reducing the permitted maximum number of killed Bordetella pertussis per dose of vaccine from 20,000 million to 15,000 million organisms.

Hernias in Children

Repair of an inguinal hernia is one of the commonest operations in children; the hernia is almost invariably an indirect one and is a congenital abnormality due to failure of obliteration of the processus vaginalis. Usually surgical repair is recommended as soon as the hernia is recognized though it may be postponed if the child is in poor general condition or is very small and the surgeon is inexperienced; but the presumption is that surgery will be needed since the patent processus vaginalis allowing herniation of bowel will not obliterate spontaneously. Since the days of McLennan in 1922 and Herzfeld in 1925 radical cure in the United Kingdom has been limited to ligation and division of the sac at its neck, with or without removal of the sac. Strangely enough, hydrocele of the tunica vaginalis in infants and children—also a congenital abnormality due to incomplete obliteration of the processus vaginalis—is accepted as a condition, which, in the first year of life at least, may resolve spontaneously, presumably because in this case further obliteration of the processus does take place.

Too little is known of the method and natural history of obliteration of the processus vaginalis, though in 1885 Sachs showed that the processus was open in 80-94% cases at
birth and 57% at one year; indeed the processus vaginalis has been found to be patent in 15-30% of adults at necropsy, with no clinical evidence of a hernia.

Much controversy has centred around exploration of the contralateral inguinal canal during repair of a clinically unilateral inguinal hernia. An appreciable number of children having had an inguinal hernia repaired later develop a hernia on the other side; this figure averages about 5% in reported series but may be as high as 31% even in experienced hands.4 Even with the high figure of 31%, however, routine exploration of the other side in every case would mean two unnecessary operations for each hernia found. The risks of such an unnecessary exploration, including an extended period of general anaesthesia and potential damage to the vas and vessels, have to be weighed carefully against the saving in time spent in hospital for those patients spared a second separate operation. Furthermore it is quite possible that a negative exploration carries a higher risk to the flimsy vas deferens and testicular artery of an infant than a procedure when a definite sac is quickly identified.

Attempts have, therefore, been made to establish a diagnostic technique more reliable for identification of a patent processus vaginalis than the palpation of the so-called “silk glove finger,” which Gilbert and Clatworthy5 showed to be wrong in 40% of cases. Ducharme6 described a herniogram, a preoperative procedure using x-rays after intraperitoneal injection of contrast; and White et al.,7 using this technique in 50 cases, had three false negative and no false positive results. Many people, however, regard preoperative herniography as a major procedure not without hazard, since it requires the introduction of a needle or cannula into the peritoneal cavity.

A recent paper from Copenhagen by Steffen Bulow8 is of some interest since it describes a peroperative rather than preoperative test. In children from 1-14 years old pneumoperitoneum was induced by insufflation of 500 to 3,000 ml oxygen through a cannula passed through the neck of the hernial sac on the affected side; a contralateral hernia then became visible or palpable at the external ring. Bulow also passed a curved uterine probe through the hernial sac in an attempt to get it through the contralateral internal ring. A contralateral hernia was discovered in 17 patients, twelve by oxygen insufflation and five by the probe alone. The trial was wisely restricted to patients over one year old because of the known frequency of patency of the processus vaginalis under that age. The author suggests that the results are at least sufficient to warrant a more extensive trial. The question still remains, however, of how many of those with a patent processus vaginalis would actually later be shown to have a hernia? Perhaps the suggested more extensive trial should be a controlled one—operation should be done on only half of those patients shown to have a contralateral patent processus, using the others as controls.

Talking about Chest Disease

British audiences rarely have a chance to take part in a full-scale medical conference American-style, but last month the Festival Hall in London was the setting for the Twelfth International Congress of Diseases of the Chest, held under the auspices of the American College of Chest Physicians. Included in the wide choice of activities were symposia, seminars, luncheon panels, film demonstrations—called by our American colleagues “motion picture clinics”—invited lectures, and clinical visits.

Dr. Wallace Fox chaired an International Symposium on Tuberculosis, in which a number of studies recently completed or still in progress in different parts of the world were reported. Several trials are trying to find how long courses of treatment need to be and are also comparing the different regimens possible since the introduction of the newer drugs such as rifampicin and ethambutol. Encouraging results have been achieved with nine-month courses of various drug combinations; treatment for this period led to hardly any relapses. Six-month courses have shown more relapses, though to those who recall a two-year period of therapy as being regarded as mandatory even these results seemed remarkably good. All agreed that the new drugs were far more acceptable than PAS (para-aminosalicylic acid). There was not yet agreement on the optimum combination, though many favoured combining one of the new drugs with isoniazid and streptomycin. One apparently effective regimen consisted of an initial two-month period of treatment with daily streptomycin, isoniazid, pyrazamidine, and rifampicin, then cutting down to twice-weekly streptomycin with isoniazid and pyrazamidine. There is still much work in progress and the importance of the results, especially to the less developed countries, cannot be overestimated.

One symposium which opened the eyes of the home participants was on “Respiratory Disease—Therapy and Patient Instruction” with speakers including chest physical therapists—a powerful group in the U.S.A. and rather different to our British physiotherapists. They are highly trained individuals skilled both in chest physiotherapy as such and in inhalation therapy, used on a much wider scale in North America, many substances including bronchodilators being nebulized by positive pressure respirators. That their training and status were rather different to their British counterparts became obvious during the afternoon session. Perhaps there is a lesson to learn here (though one suspects that their salaries are also correspondingly higher).

A luncheon panel on sarcoidosis, chaired by Dr. Louis Sitzbach, presented up-to-date concepts of the disease briefly and succinctly. Reasons were discussed for the apparently conflicting results with the Kveim test in various conditions; it appears that two particular batches of Kveim antigen had reacted in a different and rather non-specific way. This could account for the positive Kveim reactions that have been reported in such conditions as Crohn’s disease.

Several presentations dealt with pulmonary function testing and with assessments of some relatively new techniques. These included measurement of closing volume, flow volume curves, and end-expiratory levels, and several speakers pointed out that for clinical use such tests were neither sufficiently proved nor simple enough to replace such well-tried measurements as the FEV1. The exhibition included a number of pieces of custom-made pulmonary function apparatus, much of it very