

thought to be dangerous. As infant mortality was high, and most of these deaths occurred between the ages of 6 months and 2 years, the age of cutting teeth, it was widely believed that teething was a cause. In 1839, 5016 deaths in England and Wales were attributed to teething; in 1910, the figure was 1600.

The custom of lancing babies' gums probably originated with the French surgeon, Ambroise PARÉ (p 320), who introduced it as a humane alternative to even more violent treatments such as blistering, bleeding, placing leeches on the gums, and applying the cautery to the back of the head. Paré described how he got the idea from an autopsy on a baby.

When we ... diligently sought for the cause of his death, we could impute it to nothing else than to the contumacious hardness of the gums ... When we cut his gums with a knife we found all his teeth appearing ... if it had been done when he lived, doubtless he might have been preserved.

The idea that failing to lance gums contributed to infant death rate recurred frequently in the literature of the next four centuries.

The custom increased during the next 300 years. Joseph Hurlock, who wrote a book on teething, advocated gum lancing in every disease or ailment, whether the tooth was evident or not. One of the few medical men who regarded teething as natural was William Cadogan, and he was much criticized for this.

Lancing the gums became common practice. John HUNTER (p 398) would lance a baby's gums up to ten times. J. Marion Sims treated his first patient, a baby 18 months old: 'as soon as I saw some swelling of the gums, I at once took out my lancet and cut the gums down to the teeth'. The physician Marshall Hall wrote that he would rather lance a child's gums 199 times unnecessarily than omit it once if necessary and he instructed his students to do it before, during, and after the teeth appeared, sometimes twice a day. In 1846 the Scottish physician, Andrew Combe, recalled that when he began practice 'the lancet was in great vigour and a well-employed medical man almost lived in a stream of blood. *Vigorous practice* was the order of the day'.

By the mid-19th century abscesses still needed to be opened, but the lancet was used less often on babies because it was becoming clear to some that teething was not a cause of serious disease in infants and that bloodletting was a dangerous, rather than a therapeutic, procedure. Opinions about both were increasingly divided and ambivalent. Typically, Charles WEST (p 175), founder of the Hospital for Sick Children, Great Ormond Street, London, wrote that dentition was 'a perfectly natural process', yet he continued to advo-

cate gum-lancing, advising, '[I]t may be necessary to repeat your scarification several times with the same object ...'.

By 1867 the American physician Samuel Gross complained that young doctors no longer used their lancets. Yet in 1883 distinguished physicians still insisted that dentition is 'a powerful predisposing cause of diarrhea and enteritis'. The different views engendered anger and competition. The Liverpool physician Boyd Joll roused his critics to anger by advising students to leave the 'lancet in your waist-coat-pocket'. He was expressing increasingly humanitarian attitudes, new ideas about childhood, about blood, along with increasing dissatisfaction with violent treatments and greater belief in the reparative powers of nature in acute diseases. Thus the practices of lancing the gums and of bloodletting declined at a time when other forms of surgical interference (for example, tonsillectomy, tenotomy (cutting a tendon) for clubfoot, and surgery for cleft palate) were increasing. Also, the development of antisepsis and asepsis in surgery discouraged 'pocket-knife surgery' because elaborate knives and showy lancet-cases were revealed as potentially dangerous.

Lancing gums and bleeding were increasingly criticized and both continued to decline. By 1896 some observers were 'even going so far as to say that the growth of teeth causes no more symptoms than the growth of hair'. Others criticized bleeding. In 1898 in New York the pioneer pediatrician Abraham Jacobi pronounced, 'Lancing the gums has lost most of its charms'.

Child health was improving and the infant death rate was falling but some, especially dentists and pathologists, still regarded teething as potentially pathological and advocated lancing. Between the world wars there were still pediatricians who asserted that 'teething can give rise to serious symptoms', including 'diarrhea, vomiting, eczema, bronchial catarrh, and convulsions, as well as screaming fits and strabismus'. Medical texts, especially those on dentistry, still advocated gum-lancing. This common view among dentists and pathologists may have been related to their striving for professional advancement and recognition.

Today no one lances gums or bleeds patients, but lancets (now usually called scalpels) became increasingly important as modern surgery developed. Today they lie in profusion on the operating tray, streamlined, sterile, and with disposable blades. We may now have substitutes for cutting, but it will be a long time before lancets are totally displaced from medical procedures. AD

LAND MINES have been described by the US Department of State as the most toxic and widespread pollution facing mankind. The statistics bear out this grim assessment. The epidemic of

mutilation by anti-personnel mines has now spread to more than 80 countries, constituting what is recognized as a global health crisis. Some 400 million land mines have been dispersed since World War II; many millions remain undetonated in some of the world's poorest countries; another 100 million mines are held in stockpiles ready for dispersal; two million mines are laid for every 100 000 removed; 500 people are killed or maimed every week by land mines; in Angola one in 334 citizens is an amputee. And we could go on and on with these statistics, but they ring hollow in the affluent societies which have never heard a mine detonating, and they fail to depict the anguish and suffering of the victims, often children, maimed for life, and destined to eke out an existence on crutches or hobble in pain on rudimentary prostheses.

Land mines are vicious weapons and their makers have no hesitation in incorporating the latest technology to improve them so as to inflict even greater mutilation and suffering on their victims. There are blast mines, fragmentation mines, butterfly mines, bounding mines, mines with anti-handling devices to kill those who try to defuse them, and smart mines which can be pre-programmed to self-detonate (but as many as half fail to do so, leaving the need for conventional mine clearance). Mines can be laid by hand or by remote delivery; they can be scattered over wide areas from artillery or rocket warheads, aircraft or helicopters, which can disperse as many as 2000 mines in a few minutes.

So what is being done to control this epidemic of mutilation? Until recently, the answer might have been a despairing chronicle of well-intentioned but failed efforts by numerous international bodies and individuals. Then the remarkable happened. The International Campaign to Ban Landmines (ICBL), an organization coordinating the voices and efforts of over 1300 organizations in over 75 countries (which was awarded the Nobel peace prize in 1997), met in Dublin Castle in September 1998, and the little-known nation, Burkina Faso, became the 40th country to ratify the Ottawa Treaty, thereby ensuring that the Convention on the prohibition of the use, stockpiling, production and transfer of anti-personnel mines and on their destruction would come into force on 1 March 1999.

An internationally binding ban on land mines is in reality only the beginning of the solution. It ensures that when one mine is removed, twenty are not being laid elsewhere, as is the case at present. Nevertheless, the populations of mined countries must continue to live amongst the mines, to work their mined farmlands, to suffer maiming and death and see their children hobble



An amputee making a Jaipur foot.

on stumps, while their political leaders see already impoverished economies drained by the toll of mine casualties and the loss of arable land — until their region is cleared of mines and the people can once again walk in safety.

One of the urgent imperatives, therefore, in the campaign against land mines is to reduce the risks of injury from mines among the indigenous population through mine-awareness programs, which have the objective of educating civilians as to how mines work, how they may be detected and cleared, how mined areas may be identified, and how to give primary first aid to victims of land mines. Such programs are now a standard part of the overall strategy in mine-infested countries,



A young amputee from India.

but they must be developed so as to be effective among often poorly educated people, and they must be intensified in the areas where they are needed.

Mine awareness may reduce casualties, but unfortunately does not stop them. For those surviving a land mine detonation there is the inevitability of coping with life as an amputee. For most victims living in the poorest countries of the world the prospect of being able to walk again depends on a cheap and durable prosthesis being available. A major contribution to the amputee victims of land mines has come un-

expectedly from the Sawai Man Singh Hospital in Jaipur, where the 'Jaipur foot', a simple but ingenious prosthesis costing less than US\$30, was developed for Indian amputees, whose injuries usually result from falling from trains. But now the Jaipur foot is in demand in many mined countries, where its low price and simplicity of production (often by trained local amputees) and its durability make it suited to the circumstances of developing countries where the people often go barefooted and work in damp rugged conditions.

Following enforcement of an effective ban on the production of land mines, and assuming their illegal dispersion can be controlled, global energies can now be directed towards the daunting task of clearing the world of mines. This will be the challenge for this new century. The technology can be developed but it will be costly, and much more than the annual £10 million per year pledged by the EU and USA will be required if the stated objective of clearing the mines by 2010 is to be achieved. Using contemporary methods for clearing mines, which basically consist of probing the ground inch by inch, is slow (one deminer can clear about 50 square meters in a day), dangerous (for every 5000 mines cleared, one deminer is killed and two are injured), and expensive (to remove a mine costing between \$3 and \$30 may cost from \$300 to \$1000). The UN has estimated that to clear the world of the mines that have been laid would cost \$33 billion, and that at the present rate of clearance it would take a thousand years even if no new mines were laid.

Scientific and technological developments will undoubtedly revolutionize the present very primitive methods of clearing land mines, but as it has taken the nations of the world to come together to prevent further destruction of the planet, so too, it will take another major international initiative to allow the unfortunate people of mine-ridden countries to walk again in peace.

Disparate mankind, sundered by national boundaries, bemused by cultural, ethnic, and religious characteristics, can overcome its differences and prejudices to unite in the cause of protecting our planet, and, though the issue here is the eradication of land mines, perhaps it is not too much to hope for a greater gain, that by applying the land mine solution to other issues threatening our future existence, we may strive for that which should be the inherent gift of being endowed with intelligence, namely, that a collective harmony of thought and expression may permit us to take an evolutionary step in the furtherance of civilization.

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See also WAR

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