Figure 1 *Tintoretto,* St Mark rescuing a slave, *1548.*

plays as the 'liturgy of the devil', while the first chapter of Dennis and Merrill's *Four Arguments for the Elimination of Television* was entitled 'The Belly of the Beast'. The role of the press, and of the journalists who earn their living from it, has always been controversial. The unreliability of the 'gazeteers' was already a commonplace in the seventeenth century. The charge of 'muck-raking' is also an old one (see p. 208).

Despite all such continuities, this book will concentrate on changes in the media. In presenting these changes, an attempt will be made to avoid two dangers, that of asserting that everything has got worse or of assuming that there has been continuous improvement. The implication that trends have moved in a single direction must be rejected, although writers trusting in it have often been eloquent and distinguished in their own fields. Thus, the Italian historian Carlo Cipolla, in his study of *Literacy and Development in the West* (1969), stressed the contribution of literacy to industrialization and more generally to 'progress' and to 'civilization', suggesting that 'widespread literacy meant . . . a more rational and more receptive approach to life'. In this respect, Cipolla's work is representative of a mid-twentieth-century faith in 'modernization', a faith which underlay the literacy campaigns

Figure 2 *Anon*, The Vision of St Bernard, *Book of Hours, c.1470*.

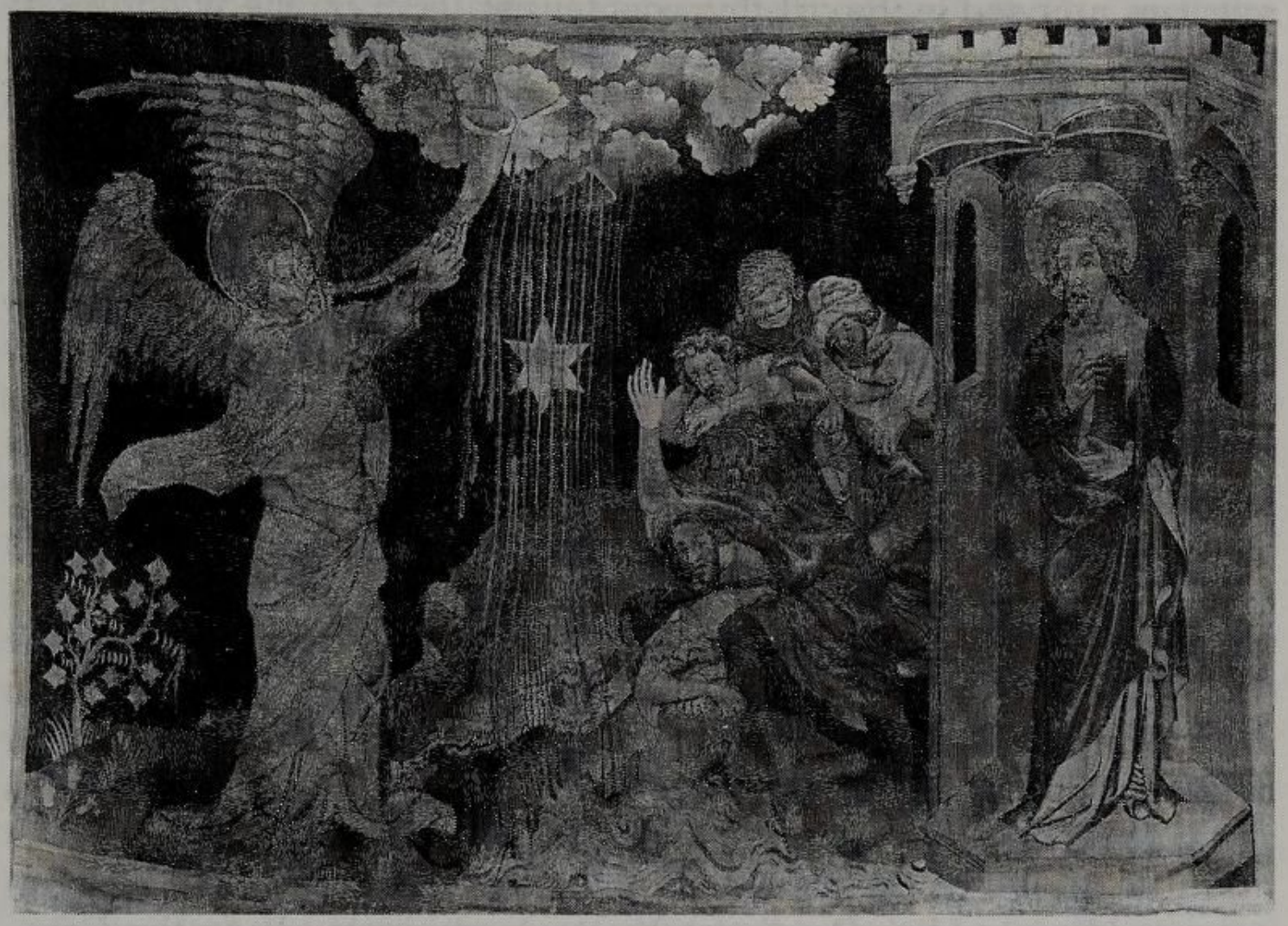

Figure 3 *Anon tapestry,* Apocalypse, *14th century.*

churches. Nonetheless, in Persia from the fourteenth century, human figures along with birds and animals were prominent in illuminated manuscripts which went on to flourish in the Ottoman Empire and Mogul India. They were illustrating history or fable. The most famous western example of such illustration was in needlework, the *Bayeux Tapestry* (*c.*1100), which vividly depicted the Norman Conquest of England in 1066, a strip 232 feet long presenting a visual narrative which has sometimes been compared to a film in respect of its techniques and effects.

In medieval cathedrals, images carved in wood, stone or bronze and figuring in stained glass windows formed a powerful system of communication. In his novel *Notre Dame de Paris* (1831–2), Victor Hugo portrayed the cathedral and the book as two rival systems: 'this will kill that'. In fact, the two systems coexisted and interacted for a long time, like manuscript and print later. 'To the Middle Ages', according to the French art historian Emile Mâle (1862–1954), 'art was didactic'. People learned from images 'all that it was necessary that they should know – the history of the world from the creation, the dogmas of religion, the examples of the saints, the hierarchy of the virtues, the range of the

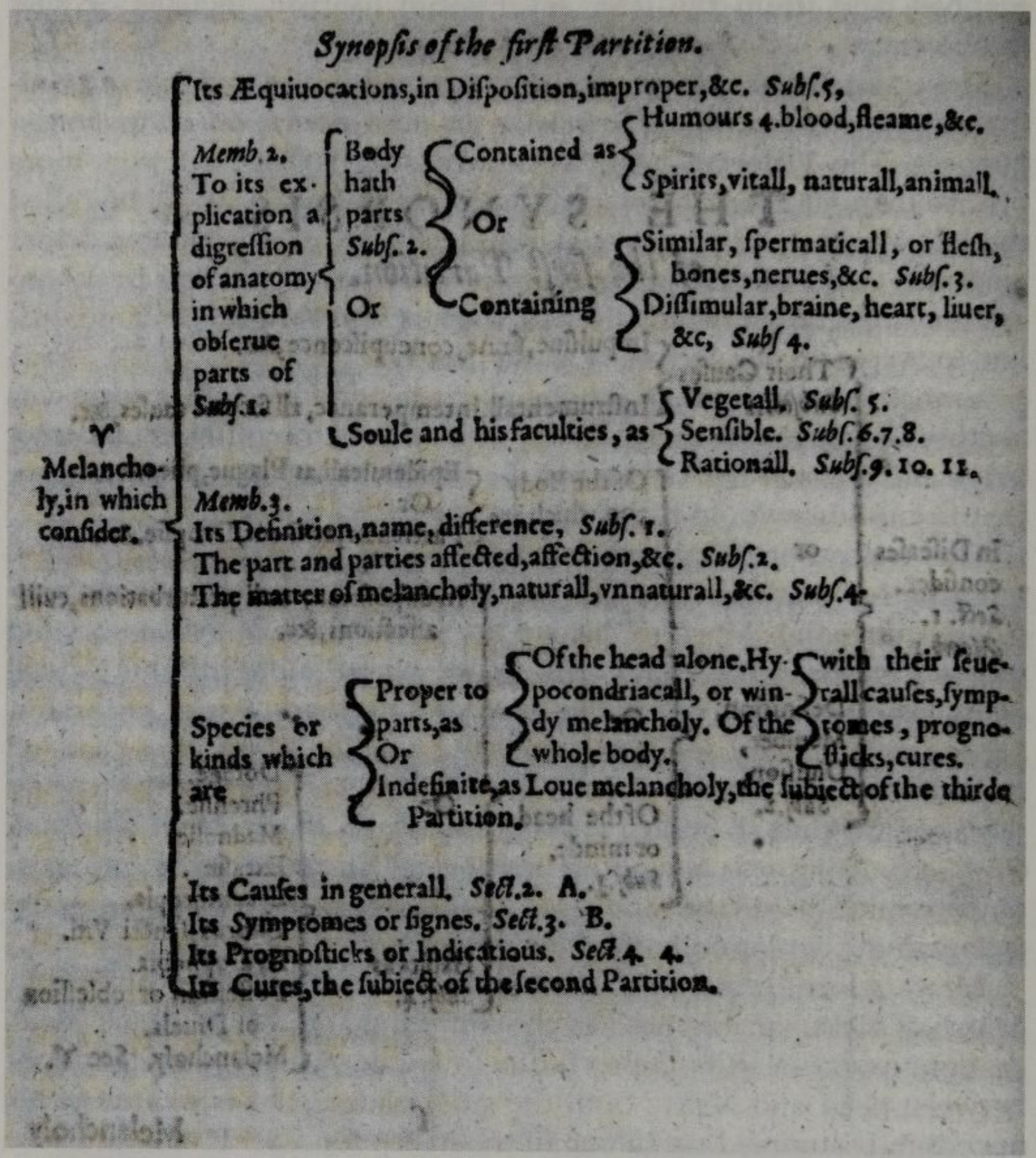

Figure 4 *Ramist table of contents from Robert Burton's* Anatomy of Melancholy, *1st edition, 1621.*

point about information designed for the eye might be made about timetables and astronomical tables (from the sixteenth century onwards) and tables of logarithms (first printed in the seventeenth century).

Such books were too expensive and too technical to appeal to more than a tiny minority of the population, and printed matter also came in cheaper and simpler forms such as 'chap-books', often illustrated, though the illustrations were sometimes taken over from earlier books

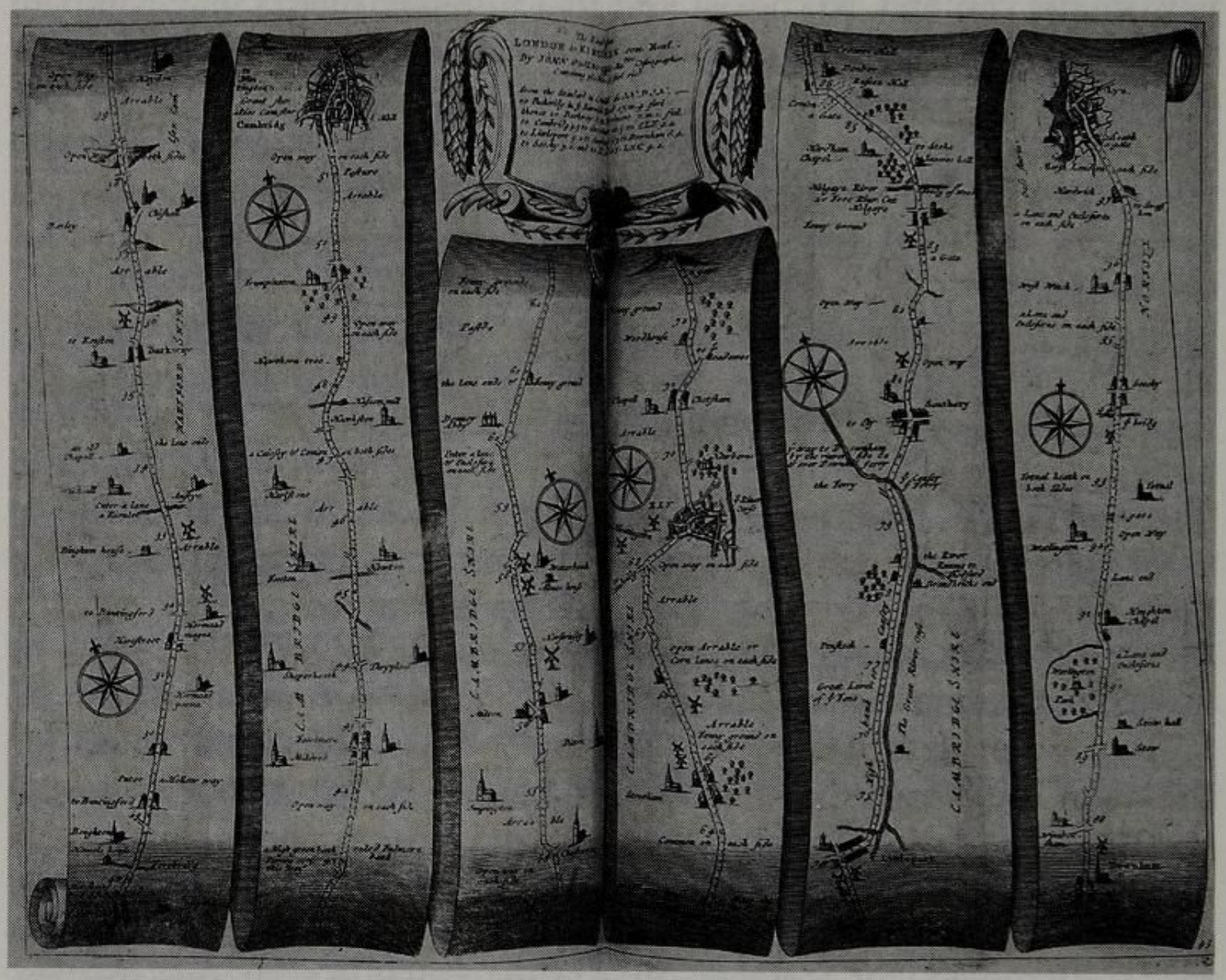

Figure 5 *John Ogilby, road map from his* Britannia, *1675, showing Cambridge.*

by land compared with 4 by sea. Letters were normally carried overland, but a system of transporting letters and newspapers, as well as people, by canal barge developed in the Dutch Republic in the seventeenth century. The average speed of the barges was a little over four miles an hour, slow compared to a courier on horseback. On the other hand the service was regular, frequent and cheap, and allowed communication not only between Amsterdam and the smaller towns, but also between one small town and another, thus equalizing accessibility to information. It was only in 1837, with the invention of the electric telegraph (see p. 133), that the traditional link between transport and the communication of messages was broken.

Empire and Communication

Communications, as the American political scientist Karl Deutsch puts it, are 'the nerves of government', especially important in large states, above all in far-flung empires. Charles V (ruled 1519–58), whose

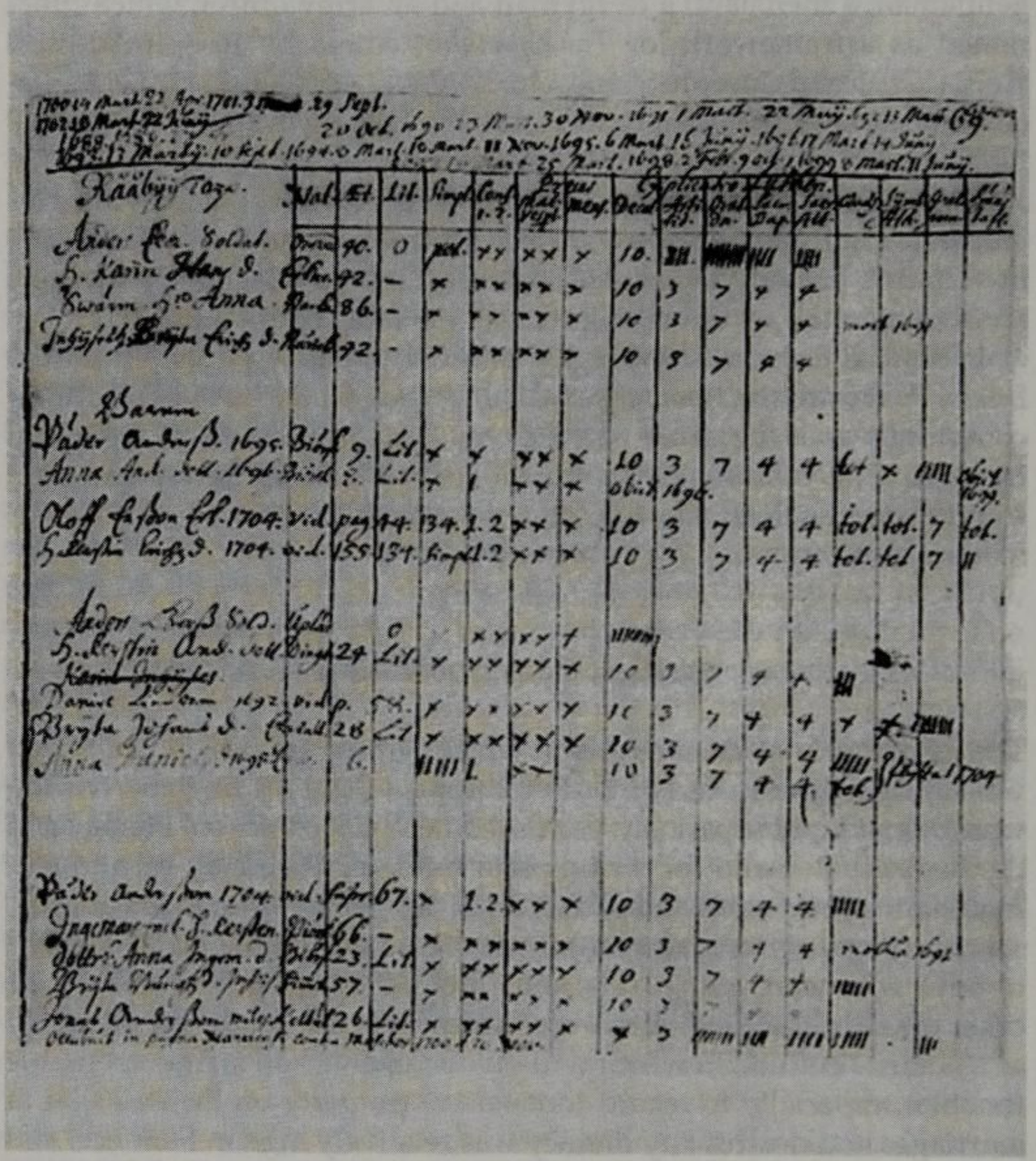

Figure 6 Register of household literacy examination in Sweden

early modern literacy (Figure 6). Among other things, they reveal that the widespread ability to read, which extended as far as women and children in rural areas, was the result of a massive campaign between 1670 and 1720. On the whole, however, early modern Europe was a society of restricted literacy in which only a minority of the population (especially males, townspeople and Protestants) could read and fewer still could write.

Hence the importance of what has been called 'mediated literacy', in other words, using literacy for the benefit of the illiterate. In cities of

Figure 7 The Repeal, or the Funerary Procession of Miss Americ-Stamp, *1765*.

also introduced western European images to other cultures. They were used as models by painters of religious images in the Russian Orthodox world from the middle of the seventeenth century onwards, and they also influenced styles of representation as far afield as Persia, India, China, Mexico and Peru.

Popular political consciousness, to be discussed in more detail in the next chapter, was encouraged by the spread of satirical prints, especially in seventeenth- and eighteenth-century England and in revolutionary France (see pp. 90, 99). Some of these images are known to have sold extremely well. For example, a print celebrating the repeal of the Stamp Act, to which the American colonies strongly objected, in 1765, sold 2000 copies at a shilling each in only four days, and it is said that another 16,000 copies were sold in illegal versions (Figure 7). In the course of the period the conventions of representation changed, with the allegorical print, such as the mock-funeral, being replaced by the more direct political caricature of, for instance, Sir Robert Walpole, Charles James Fox, or the Prince of Wales, the main target of the artist James Gillray (1756–1815) in the 1780s, before he turned to satirizing the French Revolution.

Figure 8 *Marguerite Gérard and Jean-Honoré Fragonard,* The Reader.

been clear that texts can and have often been read in ways quite contrary to the author's intentions. The *Utopia* of Thomas More (1478–1535), for instance, has been treated not only as a satire on the England of his day, but also as a blueprint for an ideal society, a 'utopia' in the modern sense of the term. *The Courtier*, by Baldassare Castiglione (1478–1529), an open dialogue in which appropriate behaviour in dif-

Figure 9 *Lucas Cranach, woodcuts of Passional Christ and Antichrist, 1521.*

Images in print as a form of communication with the illiterate were a still more important means for the diffusion of Protestant ideas, as Luther himself was well aware when he appealed to the 'simple folk', as he called them. His friend Lucas Cranach (1472–1553) produced not only paintings of Luther and his wife but many polemical prints, like the famous *Passional Christi und Antichristi*, which contrasted the simple life of Christ with the magnificence and pride of his 'Vicar', the Pope. Thus one pair of woodcuts shows Christ fleeing from the Jews because they are trying to make him their king, while the Pope, on the other hand, defends with the sword his claim to temporal rule over the states of the Church (an obvious reference to the belligerent Pope Julius II, who had died in 1513). Christ was crowned with thorns, the Pope with the triple crown or tiara. Christ washed the feet of his disciples, but the Pope presents his foot for Christians to kiss. Christ travelled on foot while the Pope is carried in a litter (Figure 9).

Figure 10 *Hans Baldung Grien, woodcut of Martin Luther with halo, c.1523.*

obedience, the right response at the level of message might therefore be the wrong response at the level of medium.

For their part, the Catholics continued to put a good deal of effort into the production of religious images, particularly after iconoclastic Protestants had destroyed them inside and outside churches, in the

Figure 11 *The seventeen provinces and principal cities for iconoclasm in 1566.*

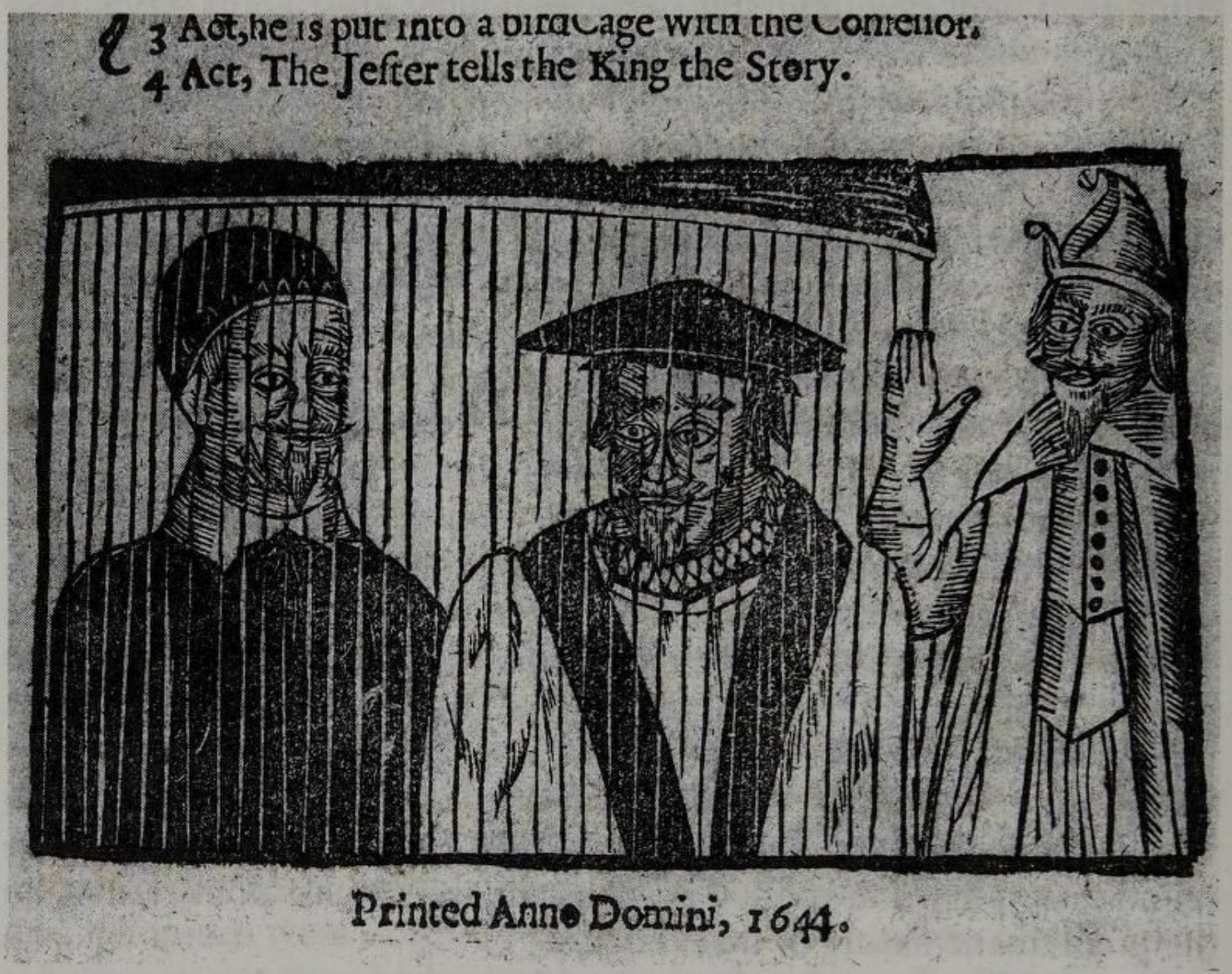

Figure 12 *Richard Overton*, Canterbury, his Change of Diet, *title page, 1641.*

Topical messages were not confined to pamphlets and newspapers. Political graffiti on London walls and other public places provide vivid illustrations of the extension of the public sphere at this time. Pictorial propaganda was prominent too. About 150 political prints have survived from the year 1641 alone, some of them attacking Charles I's ministers, the earl of Strafford and Archbishop Laud (Figure 12). The scene of Laud in a cage offers a clue to the style of the street theatre which flourished in London at the time, as it had done in German cities during the Reformation (see p. 81), while the trial of Charles I, followed by his public execution on a scaffold outside the Banqueting House in Whitehall in 1649, was a high political drama which compensated in part for the closing of the theatres in 1642. The continuing importance of oral communication is revealed in the so-called Putney Debates in 1647, in which a draft constitution known as the 'Agreement of the People' was discussed in an Army Council in which all ranks were represented, the claims of property were challenged and the extension of the franchise demanded.

Print was also important in the appeal to the people and the consequent extension of the public sphere. In 1641, no fewer than 20,000 copies of the *Grand Remonstrance* of the Parliament against the regime

Figure 13 *Political plate, c.1789.*

plates carried political messages such as 'Long live the Third Estate' (*Vive le tiers état* or *Union and Liberty*: Figure 13). So, once again, did playing-cards.

The Revolution may be described as a long-running political theatre, with the public executions of Louis XVI, Marie Antoinette and later of leading revolutionaries such as Danton and Robespierre as the most dramatic scenes. There were also public festivals, whether in Paris (especially the large open space of the Champ-de-Mars) or in the provinces: the Festival of the Federation, for instance, or those of the king's death, of the sovereignty of the people, of the supreme being and of reason. The painter David was the designer and choreographer of some of these festivals. Their huge scale (to twentieth-century eyes, reminiscent of the Nuremberg Rally or the Mayday parades of the USSR) expressed the new democratic values of the time by allowing thousands of people to participate. They were also expressions of a process of secularization in the sense of what the French historian Mona Ozouf calls a 'transfer of sacrality' from the Church to the State.

The conscious mobilization of the media in order to change attitudes may be described as propaganda. Originally a religious term, coined to describe the propagation of Christianity, the word 'propaganda' acquired a pejorative meaning in the late eighteenth century, when

"WHAT WILL HE GROW TO?"

Figure 14 *King Steam and King Coal watch anxiously the Infant Electricity. A* Punch *cartoon of 1881 pitting two technologies, old and new, in symbolic opposition. They were to co-exist. Electronics was a twentieth-century development.*

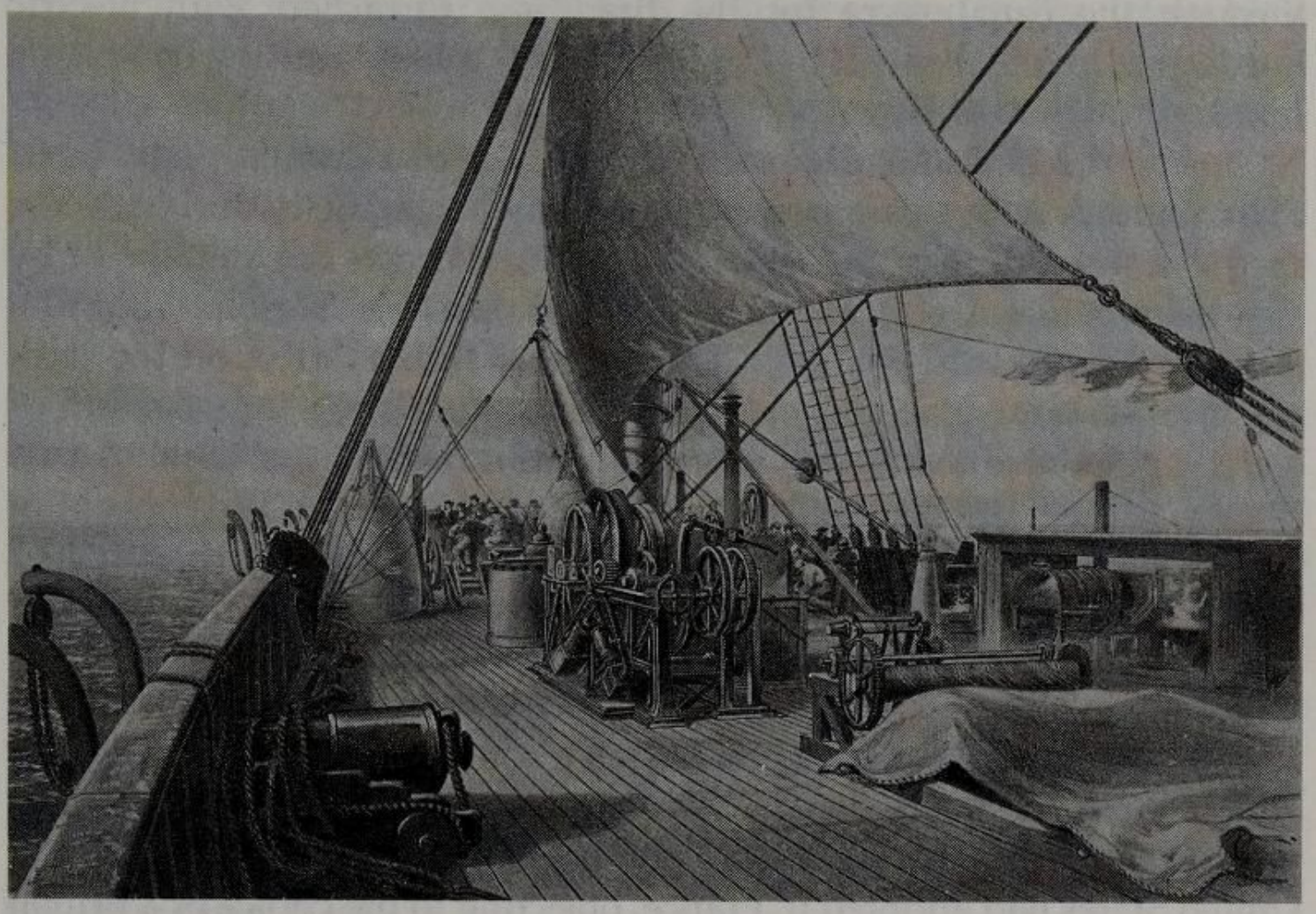

Figure 15 The Laying of the Transatlantic Cable, *1865. The* Great Eastern *(22,500 tons) was the only ship able to carry it. The task was not completed until July 1866.*

when it crossed the Atlantic in 1865, having laid the first transatlantic cable. By then, Samuel Cunard, born in Canada in 1787, had established the British and North American Packet Company with a fleet of five sister ships on the first of which, the *Britannic*, Charles Dickens travelled in 1843.

The peak year for the building of new sailing ships in Britain was 1864, and even after that steam did not completely supplant sail. Nor was the switch from sail to steam the only significant development. When the first steel ship, the *Serbia*, took to the seas in 1881, it was also the first ship to be fitted with electric light. The turbine, invented in Britain, was a major technological change. Meanwhile, canals which linked oceans, the Suez and the Panama, shortened travel times. The former, opened with pomp (and the music of Verdi) in 1869, was the dream of a Frenchman, de Lesseps, who believed, like St Simon, one of the people who inspired him, that between them industry and communications could transform history. British businessmen shared this belief, and Thomas Cook was present at the opening of the canal. A less well-known date in its history was 1887 when ships passing

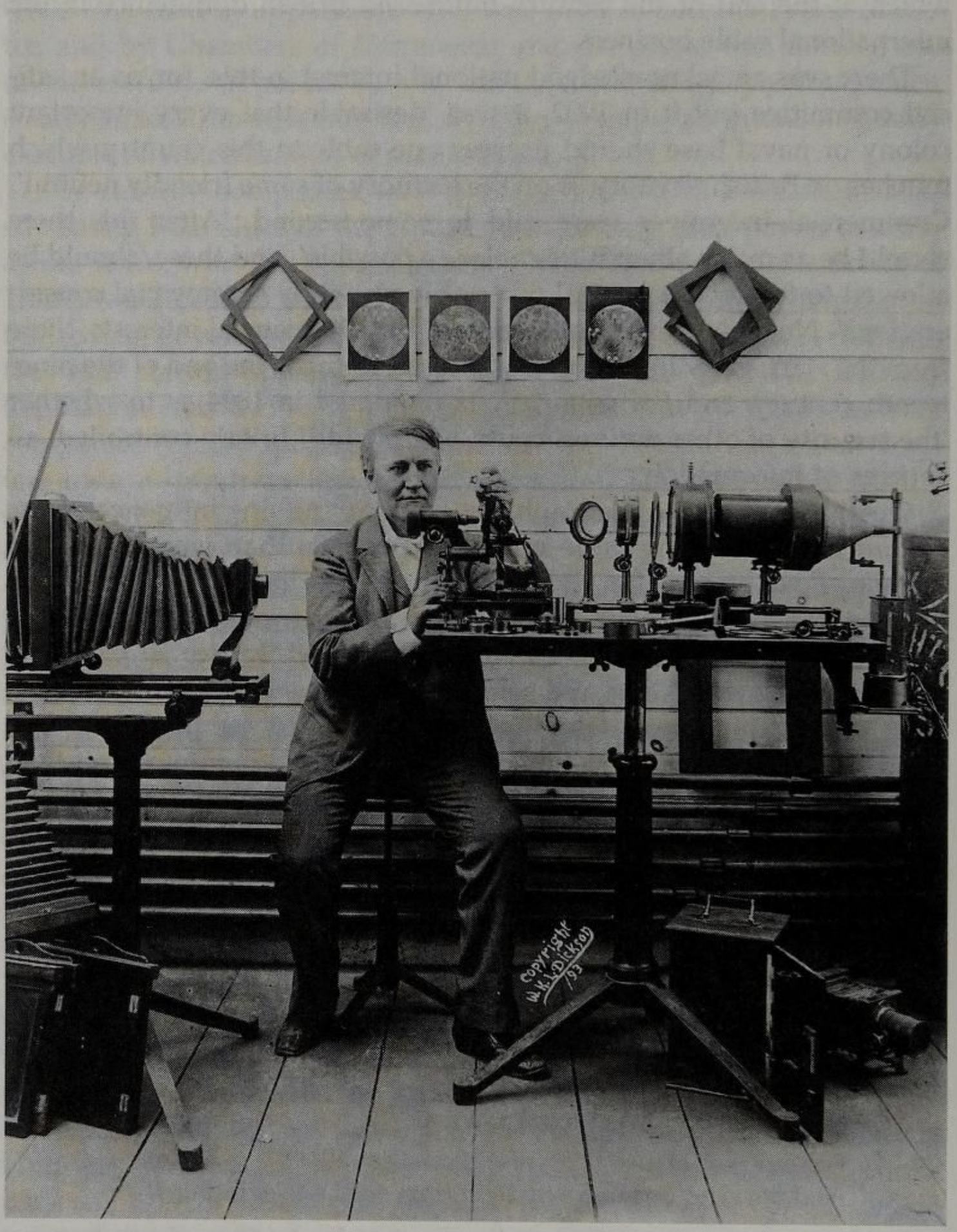

Figure 16 *Thomas Edison at work. Both his laboratory and his study were workplaces. 'Inventor of inventors' he had more inventive ideas than anyone before or since. He secured his patent for the phonograph in 1878 two months after applying: the Patent Office had seen nothing like it before.*

often dramatically, in the early years of what has been called 'reckless expansion'. According to A. D. Chandler, American business historian and author of an indispensable book, *The Visible Hand* (1977), the competitive telegraphic companies then formed were the first modern busi-

Figure 17 *'Weavers of Speech'. A telephone advertisement for the Bell Telephone Company, drawing on metaphors with a 'mythical past and a technological and commercial future'. There is a Wagnerian twist to the weaving and a hint of the World Wide Web.*

business advantage that Boulton and Watt had enjoyed a century before. Bell, now a rich man, lived until 1922, keenly interested in every aspect of telephone development – and in much else in the field of telecommunications.

From the start Bell had proved himself to be more than an inventor, offering the world a 'vision', as Vail was to do. After visiting Britain in 1877, he set out what he called 'a grand system', 'something which might sound utopian', a 'universal network reaching into homes, offices and workplaces'. This required the invention of switchboards and exchanges, however, as well as necessary improvements in the transmission of speech; and although the beginnings of these came quickly too – the first switchboard was installed in New Haven in 1878 and the first exchange in London was opened in Coleman Street in 1879 – it took time for the telephone to 'come within the means of the ordinary householder'. It was a doctor in Lowell, a city once more figuring in communication history, who suggested a numbering system in 1880, but dialling did not arrive until 1896 (in Milwaukee).

Mechanized switching, with which the name of A. B. Strowger, a Kansas City undertaker, is usually linked, was introduced in La Porte, Indiana, in 1892: for the first time subscribers could make a call without

Figure 18 *The young Guglielmo Marconi. He arrived in London from Italy in February 1896 with a bundle of wireless devices. He set up his Wireless Telegraph and Signal Company in 1897.*

Within this context, wireless, the culmination of nineteenth-century communications history, was thought of simply as a substitute for wired telegraphy, just as automobiles, the high point of nineteenth-century transportation history, were thought of as horseless carriages: only people with carriages might desire them. It followed that radio would be of most practical use on the oceans or in large, sparsely populated continents, and the fact that its signalled messages, all in Morse, could be picked up by people for whom they were not intended – its broadcasting dimension – was deemed to be not an asset but a serious disadvantage. Likewise, the automobile was a luxury product, and no one envisaged a car in a suburban house with a garage any more than a similar house would later be associated with a wireless set.

In visiting England Marconi wanted quick results, and when he founded his Wireless Telegraph and Signal Company in 1897 he concentrated primarily on devising and selling wireless apparatus to large-scale commercial and governmental customers. He had royalty in mind too: in 1897, over a hundred messages passed between Queen Victoria

Figure 19 The Jazz Singer. *Crowds gather to see Al Jolson in the world's first 'talkie', a Warner Brothers film in 1927.*

English languages might be, was absent in Britain. Different national cultures were expressed in film, often unconsciously, sometimes deliberately, with France throughout and Germany until the advent of Hitler in 1933 emphasizing the role of film as an art. The sense of there being creative *avant gardes* involved in film was strong. There were filmmakers who drew sharp distinctions between their products and commercial films shown in cinemas. In the nineteenth century George Gissing had anticipated what they would say in what he wrote about literature in his novel *New Grub Street* (1891).

There was a new twist in the 1930s. The Depression stimulated the making of films that expressed the social conscience of their makers. In Europe, some of them were influenced by makers of documentaries. Radio was influential too. For André Malraux in France, the talkies only became an art form when directors realized that their model should not be the gramophone record but the radio feature. There was little in common, however, between radio features and the lavish musicals in colour which were made towards the end of the 1930s, like *The Wizard*

Figure 20 *Alfred Harmsworth, first Viscount Northcliffe, greatest of British press tycoons, seen here in 1911 with members of the Astor family. His passion was automobiles.*

worked for the cycling magazines *Wheel Life* and *Bicycling Times* before he moved onwards into motoring, his greatest love, and at the same time became a 'media mogul'. In 1902, he published a still readable book, *Motors and Motor Driving*. In the United States, Hiram Maxim (1869–1936), son of the inventor of the Maxim gun and himself the inventor of an automobile, wrote with hindsight in his autobiography that 'the bicycle could not satisfy the demand which it had created. A mechanically-propelled vehicle was wanted instead of a foot-propelled one, and we now know the automobile was the answer.'

It was not the answer for those people who in the twentieth century could not afford to buy automobiles, even after they had ceased to be a luxury, for bicycles not only continued to coexist with automobiles (as old and new media coexisted), but were to remain the dominant form of transportation in late twentieth-century China. Meanwhile, Japan became a major producer both of bicycles, some from the 1960s onwards luxury products in themselves, and of automobiles. There was a psychological angle, too, as well as an economic one, to the

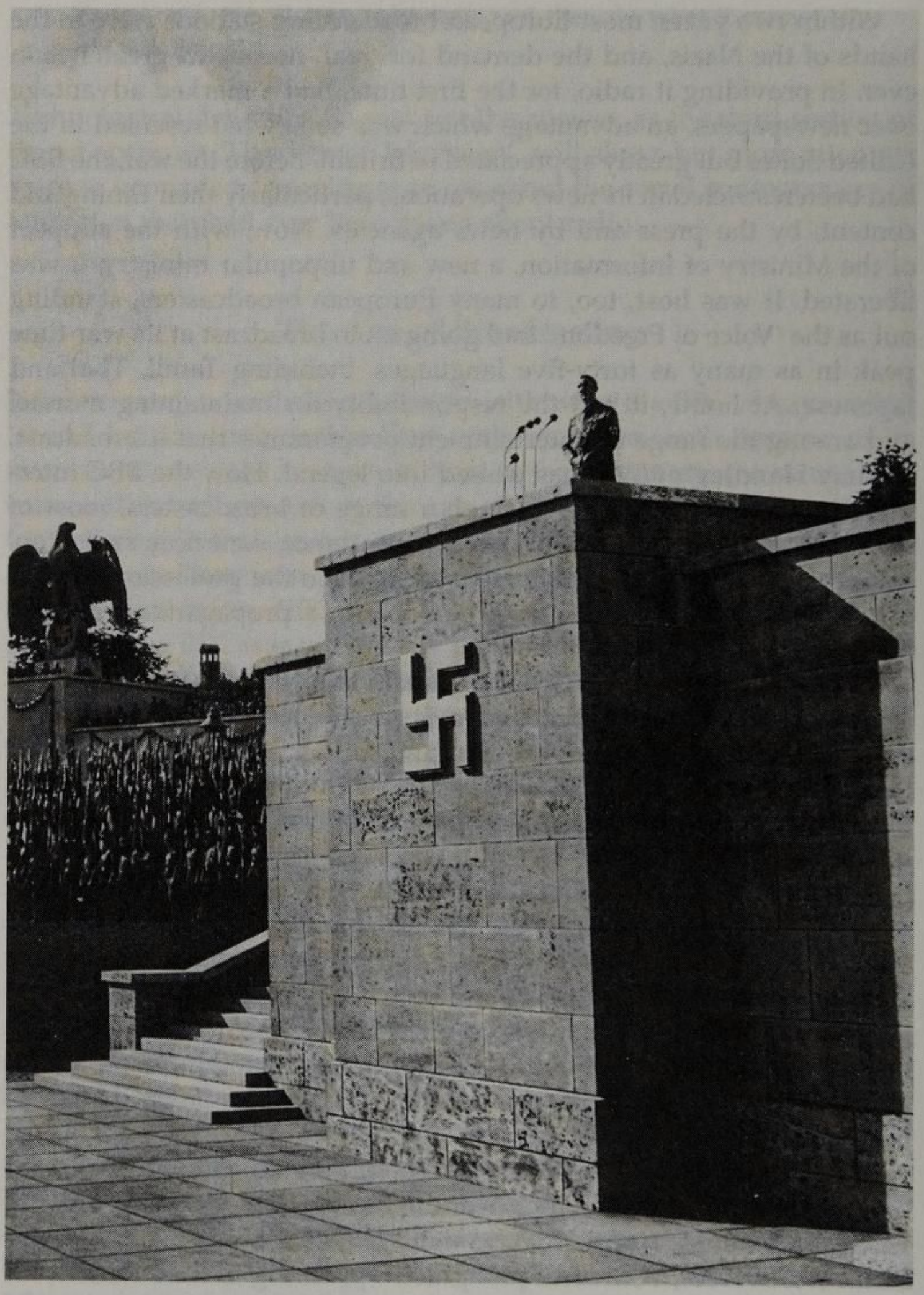

Figure 21 *In the stadium. Adolf Hitler, assisted by his Minister of Propaganda, Josef Goebbels, used the microphone as a megaphone. Here, separated from his huge audience, he addresses a rally.*

Figure 22 *At the fireside. Franklin D. Roosevelt uses radio to chat to his fellow citizens. He put his trust in what he considered democratic communication.*

to make his listeners feel that he was present with them in their homes. Nor was this his only use of radio. His eight chats represented only 8 per cent of his radio addresses between 1933 and 1936: one of them on a public holiday was heard on 64 per cent of American radios.

None of these uses of the radio had been part of the British experience, however, so that in dealing with the move from peace to war the BBC, which during the first years of its history had been required by government to keep out of all controversial broadcasting, had to adapt its structures and its policies more than any other great broadcasting organization. Nevertheless, the range of its pre-war programming was far wider than that in any other country, particularly the United States, and it maintained this advantage during and after the war. In its overseas transmission it continued to take pride in broadcasting 'the truth'. In its domestic programming it now abandoned much that had been considered fundamental in its early years, a special pattern of broadcasting on Sundays, for example, and unwillingness to broadcast too much 'pop music'.

At the start of the war, obeying government instructions, the BBC broadcast only a single programme, but as early as January 1940 it

Figure 23 *John Reith, architect of British broadcasting, appeared in many cartoons, including* Punch, *where he could figure as Prospero. (The BBC's house magazine is called* Ariel.*) 'The isle is full of music, sounds and sweet airs that give delight.' This cartoon shows him outside the new Broadcasting House.*

Figure 24 *Transistor radios transformed life on the beach and in the desert where there was none. Radios were mobile, a key asset in media history (note the mobile phone), portable and cheap. Transistors had a bigger history, a key invention in the development of the computer.*

Figure 25 *The moon landing, 1969. The Americans tell the world they are in space. The successful Apollo project enabled Neil Armstrong to be the first human to walk on the surface of the moon. Yuri Gagarin was the first human to orbit the earth.*

television companies but was opposed by the Pilkington Committee. It was 'independent television', not the BBC, which initiated a television service for schools in its regular programming, but in 1964 the new Chairman of the Schools Broadcasting Council, Sir Charles Carter, the Vice-Chancellor of Lancaster, a new university, urged in face of much school teachers' opinion to the contrary that television 'opened up opportunities' which were 'as exciting as anything since the arrival of the cheap printed book'.

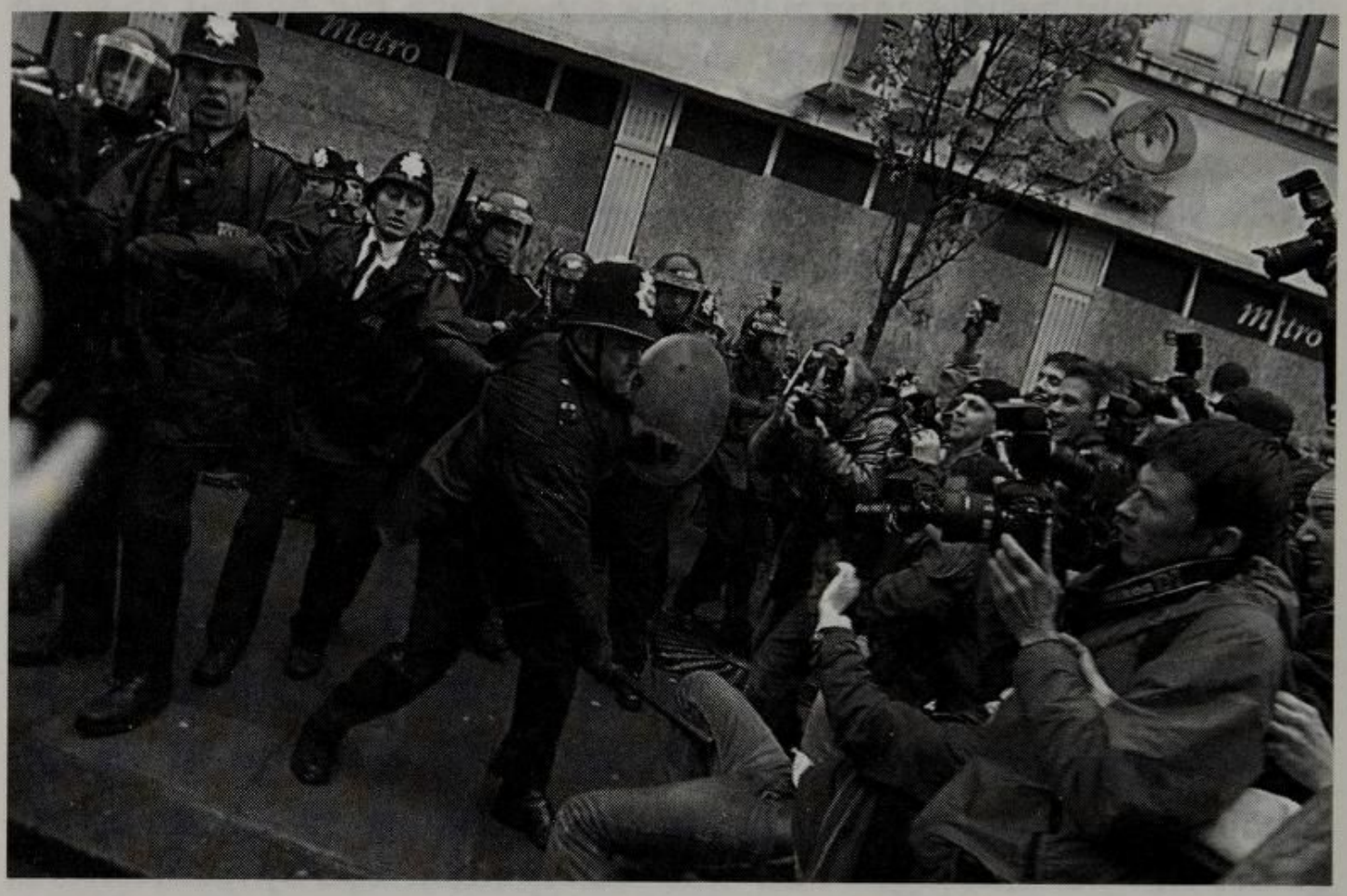

Figure 26 *The press retains its power: police and photographers at May Day protests, London, 2001.*

In none of the ages, some of which were thought of – at least in retrospect – as golden, did one medium eliminate another. Old and new coexisted. The press remained a powerful force during the 1960s, and in some ways increased in importance after that date. Television, sometimes called 'the fifth estate' (see p. 192), did not supplant radio, dismissed when television was young as 'steam radio'. The railway remained an important agency of transportation even while or even because the number of automobiles increased more rapidly than ever before. Letters still went by post. Yet as technological advance speeded up (with occasional lags), old technologies were being challenged and, above all, their institutional framework was having to be thought out afresh.

There was a backward-looking as well as a forward-looking aspect to the process. Interest began to grow during the 1960s and 1970s, not only in steam locomotives, refurbished trams and vintage cars but in the range of fears and expectations of earlier generations when, in Carolyn Marvin's words, 'old technologies were new'. 'Retro' was to become a favourite prefix a decade later in the United States. From the start, the word 'generation' was applied to computers as well as to

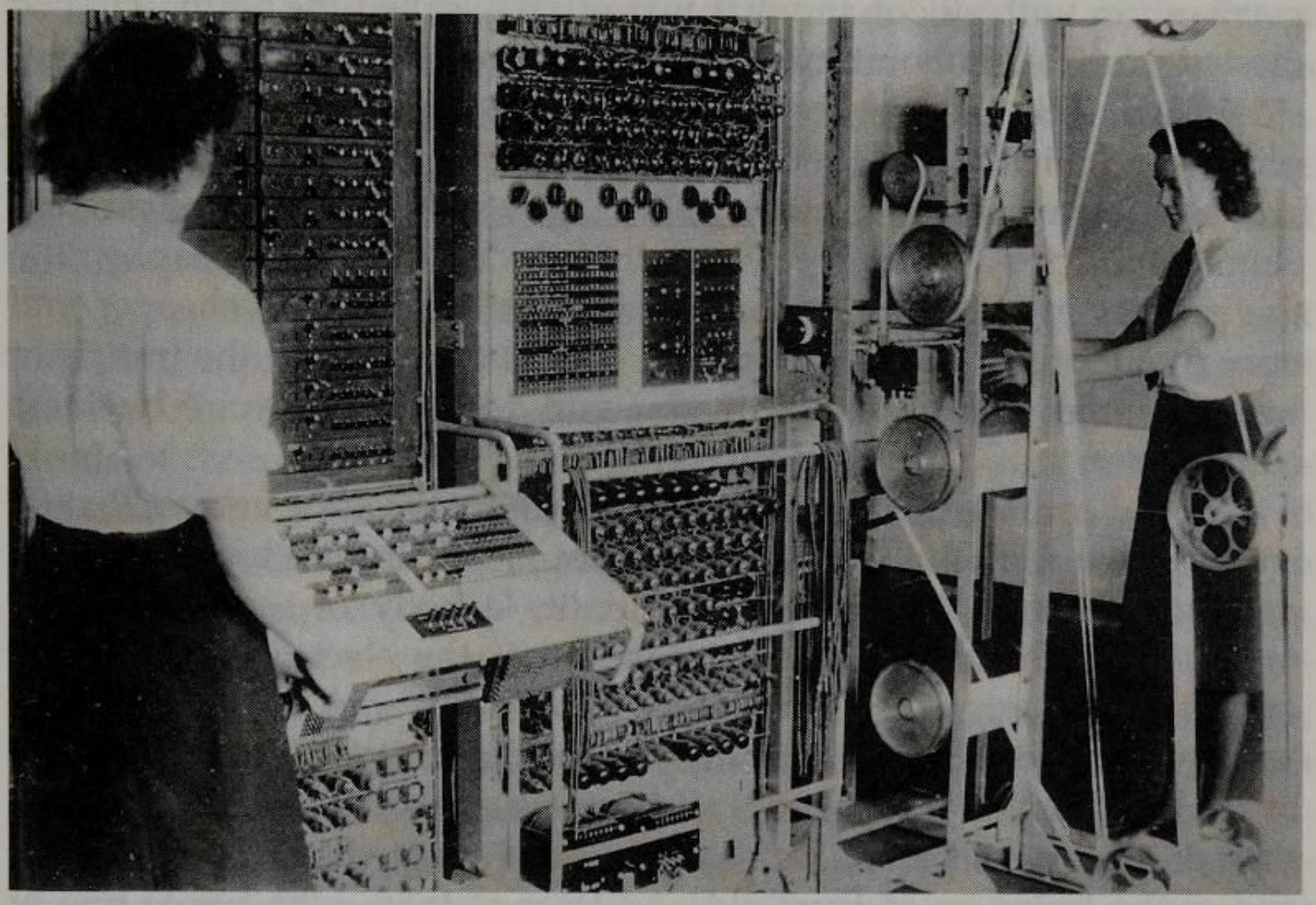

Figure 27 *The Colossus electronic code-breaker was used at Bletchley Park, Buckinghamshire, to help Britain and its allies win the Second World War.*

The making of the first transistors depended on advances in semiconductor physics following experiments in the Bell Laboratories and elsewhere. In 1947, John Bardeen, Walter Brattain and William Shockley (who became Nobel Prize-winners three years later) devised solid state amplifying devices made out of germanium and looking like two cat's whisker detectors. It was not until 1959 that sales of transistors (the first customers for them were makers of hearing aids) exceeded those of valves. The unfamiliar name 'transistor', which their devisers gave to them, was initially adopted by the public to refer not to the devices themselves but to the small battery-driven portable radios incorporating them, which were first marketed seven years later, with the American Regency TRI as the first model. (Bardeen was appalled that the users' main fare was rock music.)

Naming is an interesting and often revealing subject, not least in the history of the media, which is littered with acronyms, or of the underlying technology. The imaginative choice of names sometimes triumphs over functional description of objects. In this particular case, however, it was less interesting than further developments in the technology, for which a number of different physicists and computer engineers were responsible. The first of them, Gordon Teal, replaced

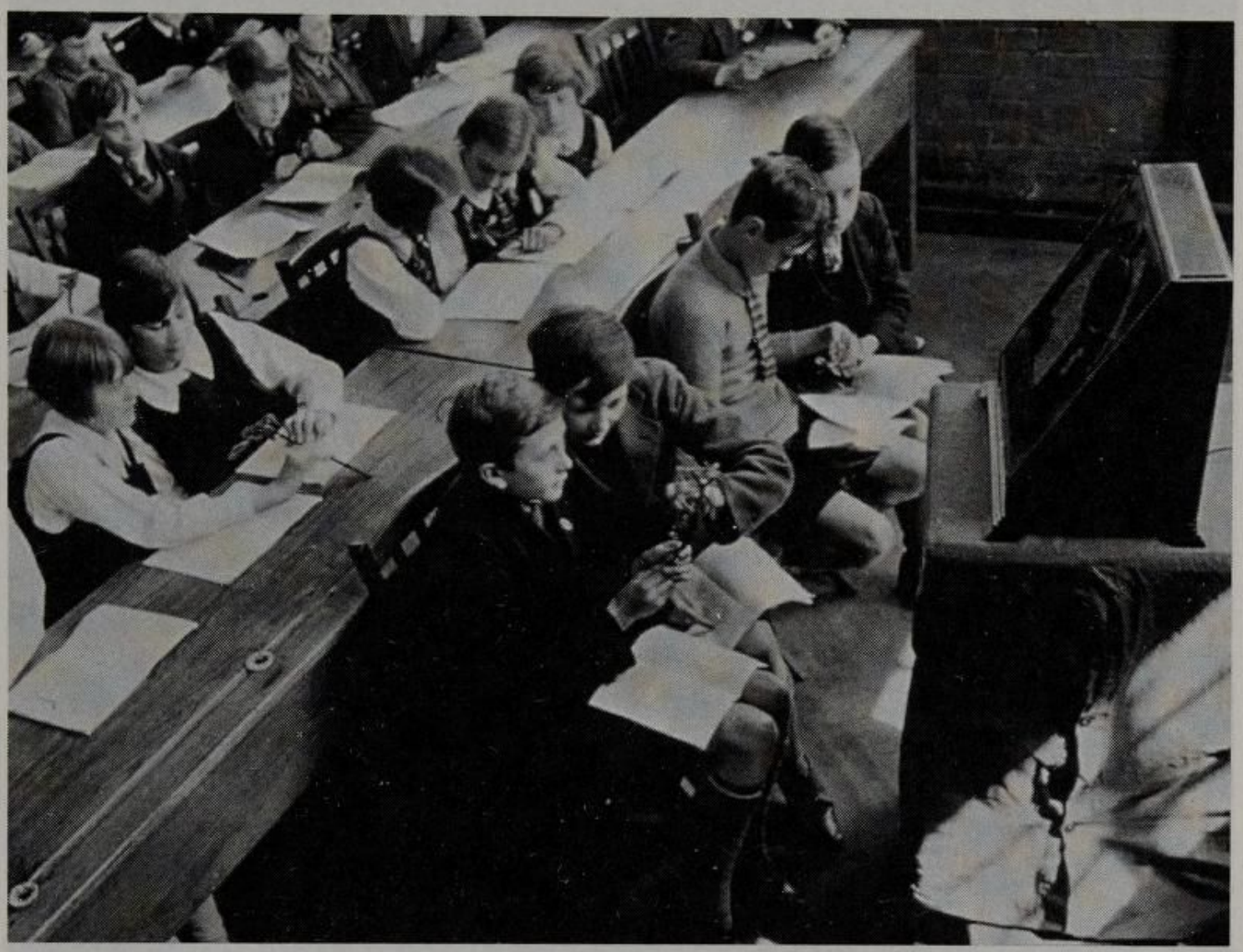

Figure 28 *Education finds an ally in communications technology:* a. *Pupils from Wembley School listening to a radio broadcast in 1933.*

than those on the workplace. Meanwhile, Cisco Systems, one of the most effective of the Internet companies, founded in 1984, deeply involved in education and dealing in hardware, software and services, was seeking, it said, with the same emphasis, to help change 'the way we work, live, play, and learn'.

One scholar of the Internet used more vivid and more provocative language. When David Gelernter published *Mirror Worlds*, forecasting the Web, in 1991, (see p. 307) a picture of him appeared on the front page of the business section of the Sunday *New York Times* in 1992. Sadly, in June 1993 he was critically injured by a terrorist nail bomb. *The Second Coming* was a fitting title therefore, to his manifesto published in 2000, although it referred to the computer and not to himself. He argued that while in the first age of computers the main themes had

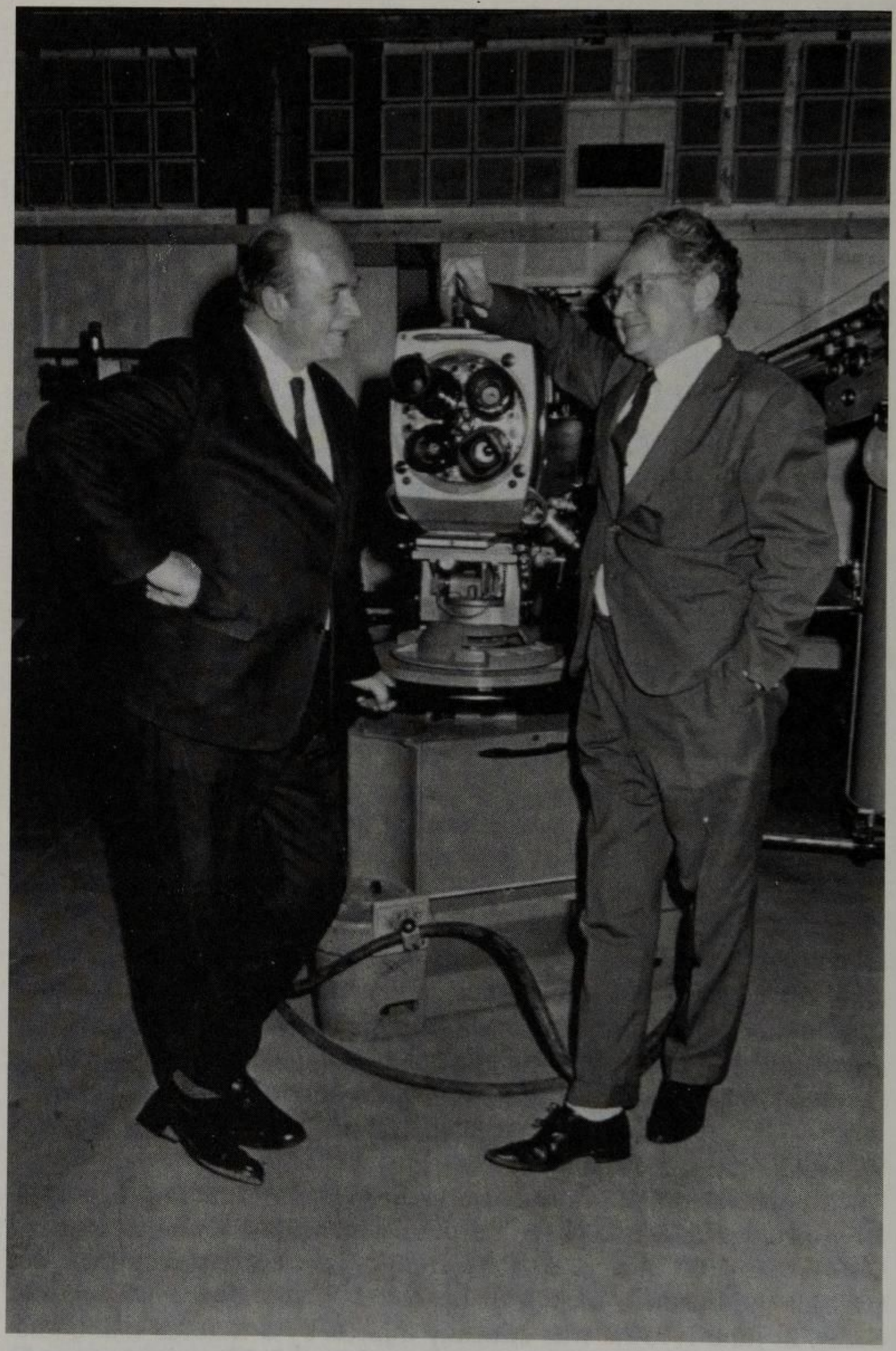

Figure 28 b. *Walter Perry, first Vice-Chancellor of the Open University, at the opening of its first (BBC) production studio at Alexandra Palace, 1970.*

Figure 29 *The founders of Yahoo, the Internet search engine. Jerry Yang and David Filo were typically young Internet pioneers. Without the power to search, an expanding Internet would lose its power. In 2001, Yahoo's search engine is produced by another company Inktami and Yahoo serves as an info-mediator concentrating on customers.*

attackers were called 'cyber terrorists'. Other names were 'pirates' (a word used in French) and 'vandals', and there were other criminals, of various hues, including paedophiles, who used the Internet for their own purposes without being computer buffs, and confidence tricksters, some of whom knew every computer trick. There was also a bevy of gambling companies, enjoying what the press called 'a netbet boom'. This was a modern Bartholomew's Fair, so far with no successes of the playwright Ben Jonson to describe it. Gates was not in the fair, however, he was on his campus – more interested in computer control than in the antics of a fair. Cambridge, England, was on his map as well as Seattle, and Seattle was on the map in 2000 less because of him than the much-publicized protests against the World Trade Organization