

HAT (AS. *hæt*, Swed. *hatt*, Dan. *hat*). A general word for head covering, especially one easily removable, with crown and brim. While no ancient hats have been preserved, we have illustrations of many, varying from feathered headdresses to the tall cylinders worn by Hittite kings and queens. Most common of all were round hats, often with a narrow brim, sometimes with a low crown, and sometimes with a high crown. By the Greeks and Romans hats were much less worn than by modern Europeans and Americans. The classic *causia* was a felt hat with high crown and broad brim slightly rolled. The *petasus* was a broad-brimmed hat of felt with low crown, tied on either under the chin or behind the ears, and worn principally by travelers. The *pileus* was also of felt, but more like a modern cap, sometimes as simple as a skullcap. The principal head covering of Greek and Roman ladies was a veil, supplemented in cold or wet weather by a hood of linen in summer and of wool in winter, usually square in shape and untailed.

The hats of the early Middle Ages were comparatively simple caps or hoods, but in the fourteenth and fifteenth centuries extravagant and eccentric shapes and proportions were developed. Straw hats that started in the eleventh century with mushroom brims and round tops trimmed with colored materials and finished at the top with a spike or button developed pointed crowns in the fourteenth. The close helmet-shaped cap of the twelfth century, with a falling

point from the crown, was succeeded in the thirteenth by a hat with high crown, peaked front, and turned-up back, and in the fifteenth by a straight-up high hat often brimless. The common cap with folded brim had a loose crown that began to fall over on one side in the eleventh century; reached in loose folds, with serrated or foliated edges, to the shoulder in the fourteenth; and in the fifteenth often dropped as far as the knee in a long thin point. Towards the end of the fifteenth century, low-crowned flat hats with turned-up brim came in vogue. They were generally worn tilted to one side and often over a scarlet skullcap. A large bunch of plumes in front, curving backward, added greatly to the effect. On most of the tall hats, some like those of to-day but more belled at the top and with rolled and padded brim, the feather was generally at the back. In the fifteenth century the eccentric fashions of female millinery surpassed even those of the eighteenth century and of to-day. There seemed to be no limit to the altitude of peaks and cornucopias and baskets set upon the head. Weirdest of all were the creations with high receding crown flanked by huge horns. From the brims or lower edges hung veils of finest muslin, sometimes draped simply, but sometimes arranged on wire frames in portentous shapes. In the first part of the sixteenth century flatness reigned. Women wore caps of velvet or gold brocade, sometimes with padded front, with velvet falls reaching to the shoulder, or picturesquely shaped in set-out effects. The broad brims of men's hats were usually serrated, and the tam-o'-shanter shapes of the upper classes were worn tilted and adorned with feathers. During the reign of Queen Elizabeth men's hats became narrower, with turned-down curved brim and fuller crown encircled with a gold band or set with a feather on the right. Also in vogue were small tight-fitting round hats with rolled brim and feather in front. Women's head coverings had already grown to look more like hats and had a brim curved in over the brow. Falls of velvet, silk, or veiling were crowded out by the Elizabethan lofty neck ruffs and collars. There were also hats with full gathered crowns, tall hats with feather at the side, and many eccentric shapes.

During the reign of James I the brims of men's hats broadened and feathers were placed fantastically at the back and sides of the high crown. Brims were often fastened up on the right side with a jewel. In the reign of Charles I crowns were a little lower, but brims were variously curved and feathers were worn falling over them to the side or back. In the reign of Charles II high-crowned hats with band and bow in front, with flat, waved, or curved brim and with feathers on either side or all round, were the fashion. Sometimes the brim was turned up at the sides and in front, forming the three-cornered hat that flourished for over a century, but was replaced by the top hat at the beginning of the nineteenth century. During that century were developed and standardized the tall hats with straight crowns, made originally from fine fur and later of silk plush, and also the stiff felt hats with round crowns that are chiefly worn to-day, supplemented by straw hats of various shapes and qualities for summer, and by soft felt hats and cloth caps for country or occasional wear and for sports.

Political and religious differences have often

been marked by the form of hats. The Puritan of the reign of Charles I adopted the steeple hat, high and narrow, with a broad brim, and devoid of ornament, while the Cavalier wore a lower and broader crown, with a feather stuck on one side. The Quaker hat, low in the crown, with a broad brim, and plain, dates from the origin of the sect at the middle of the seventeenth century.

Hat Manufacture. The history of hat manufacture in the United States dates back to early Colonial days. In 1662 the Assembly of Virginia enacted a law offering 10 pounds of tobacco for every good wool or fur hat made in the Colony. In 1675 laws were passed prohibiting the exportation of raccoon furs from the provinces. By 1731 the industry had become of so much importance as to interfere with the trade of the English manufacturers, who petitioned Parliament to forbid the importation of hats from the American Colonies. A special committee to which the petition was referred reported that in New York and New England 10,000 beaver hats were manufactured annually, and that there were 10 hatters in the single city of Boston, one of whom made 40 hats a week. In accordance with the spirit of this petition, laws were passed forbidding the exportation of American hats to other English colonies, forbidding the manufacture of hats by any person who had not served an apprenticeship of seven years at the business, and forbidding negroes from working at the business. But in spite of these hampering restrictions the industry continued to thrive and to be encouraged by the various Colonial governments. Delaware, in 1753, offered a prize of 40 shillings for the neatest and best hat manufactured in the lower counties. Carolina, by 1767, had developed a flourishing hat industry, with a large export trade to the Spanish islands. Soon after the close of the Revolution the manufacture of hats had become of great importance in Pennsylvania, and from that time the industry has continued to flourish. The principal centres of hat manufacture in the United States to-day are Philadelphia and Reading in Pennsylvania, Newark and Orange in New Jersey, Brooklyn in New York, Danbury, Bethel, and Norwalk in Connecticut.

Felt hats are made in a wide range of qualities. The finer and more expensive grades are entirely of fur; the commoner grades use a mixture of fur and Saxony wool; and for the lowest kinds wool alone is employed. The processes and apparatus necessary for making hats of fur differ also from those required in the case of woollen bodies, and in large manufacturing machinery is generally employed for operations which formerly were entirely manual. Hatter's fur consists principally of the hair of rabbits (technically called coneys) and hares, with some proportion of nutria, musquash, and beaver's hair, though the latter material has been for many years extremely scarce, and generally any parings or cuttings from furriers are also used. Furs intended for felting are deprived of their long coarse hairs, after which they are treated with a solution of nitrate of mercury, an operation called carrotting or secretage, whereby the felting properties of the fur are greatly increased. The separation of the fur from the skin is effected by cutting the skin into shreds by means of rapidly revolving shear blades, fixed just below a table,

but so adjusted that, as the skin passes under a roller or guide fixed above the shear blade, it drops beneath the machine, while the fur, without the apparent displacement of a fibre, passes on the other side of the roller, whence it is removed and packed away until required. Different kinds and qualities of fur are next mixed to produce the quality of hat desired—an operation which is accomplished by means of a machine called a "devil," in which the fibres are pulled apart and thoroughly mingled. The fur is next taken to a blowing machine, where it is kept constantly agitated in a light current of air. The matted pieces and those to which skin adheres, together with the hair and dirt thrown out from the fine fur, drop through a set of sieves which separate the valuable pieces of fur for further treatment. The blowing process continues until the fur is perfectly free from extraneous matter, when it leaves the machine in a lap, fine and soft, but so light and filmy that it hardly bears the touch. As the fur comes from the blower it is weighed out into boxes, each of which contains fur enough for one hat. Each box of fur is now passed on to a former, a machine which consists of a revolving cone made of brass or copper, of suitable size for the hat body. The cone is pierced with innumerable small holes, through which a current of air is drawn by means of an exhaust fan. There is also an arrangement by which minute jets of hot water are thrown upon the newly formed hat body to give it sufficient consistency to permit its removal from the cone. The fur is fed through a tube to a revolving cylinder, which thoroughly opens and distributes the fur into the machine and spreads it evenly over the surface of the cone, which during this operation is inclosed in a tight box. When the fur is properly distributed, the box is opened, the jets of water are thrown upon the fur, and the embryo hat, over which a cloth is spread for its protection, is removed by hand. The whole operation takes but two or three minutes. The fur is then rolled and pressed, first by hand and then by machinery, to felt it and reduce it to its proper proportions. In the meantime it is sized to add to its strength and durability. An application of shellac dissolved in alcohol is used, a much stronger solution being required for a derby than for a soft hat. Thus far the hat has retained its conical form, but the next step is to give it the hat shape. It is placed upon a mold, consisting of a block and a matrix, which shapes both the crown and brim. The next step is dyeing, after which the hair receives further shaping upon another block. This final block is adjustable, so that all the dimensions of a hat—size of band, height and diameter of crown, and width of brim—are accurately gauged by levers, so that, of a given shape, every size can be made on the same block. Pouncing, which is a process of sandpapering to remove inequalities, follows, and is accomplished by placing the hat on a rapidly revolving block and rubbing the surface with fine emery paper. The trimmings—i.e., the sweat-band, the lining, and the ribbon binding—are now attached and the hat given another shaping upon the block.

Wool hats are made by a different initial process. The wool, as it comes from the card in a continuous lap, is wound upon a machine consisting of two cones placed base to base and revolving upon an axis placed parallel to the

end of the card. The double cone is so rotated that the continuous lap of wool is wound in a zigzag manner, crossing and recrossing from end to end. When a sufficient quantity of wool has been received, the machine is stopped, the double cone of wool is divided in the centre, the two resulting hat bodies removed for felting, and the process repeated. The processes of felting, dyeing, stiffening, blocking, finishing, and trimming follow.

Silk hats have a light stiff body, covered with silk plush of a brilliant glossy texture, the manufacture of which is the most important element in the industry. Originally the bodies were made of felt and various other materials, but now calico, muslin, or other cotton material is almost exclusively used. The muslin is first stiffened with a varnish of shellac and then cut into pieces sufficient for crown, side, and brim. The sidepiece is wound round a wooden hat block, its edges are joined by hot ironing, and the crownpiece is put on and similarly attached to the side. The brim, consisting of three thicknesses of muslin cemented together, is now slipped over and brought to its position and then a second sidepiece and another crown are cemented on. The whole of the body, thus prepared, now receives a coat of size; subsequently it is varnished, and it is ready for the operation of covering. In covering this body the under brim, generally of merino, is first attached, then the upper brim, and lastly the crown and side sewed together are drawn over. All these by hot ironing and stretching are drawn smooth and tight, and as the varnish of the body softens with the heat, body and cover adhere to each other at all points without wrinkle or pucker. Dressing and polishing, by means of damping, brushing, and ironing, come next, after which the hat is velured in a revolving machine by the application of haircloth and velvet velures, which cleans the nap and gives a smooth and glossy surface. The brim has then only to be bound, the linings inserted, and the brim finally curled, when the hat is ready for use.

The value of fur and felt hats manufactured in the United States was, in 1909, \$47,869,000, and in 1913 approximated \$50,000,000. The value of the straw hats manufactured in the United States was, in 1909, \$21,624,000.

For the straw hats made in the United States the braid is chiefly imported from Italy, China, and Japan. It is sewed by machinery and shaped on a block, the pressing being done by machinery. A sizing of glue is used to stiffen the hat before it is pressed. See STRAW MANUFACTURES. For the history of hats consult Rhead, *Chats on Costume* (London, 1906), and Hughes, *Dress Design* (ib., 1913). See HEADRESS.