Low Forceps.—In applying forceps to the head when low down no regard need be paid to the pelvic curve of the instrument—in fact, there is no such curve upon the short forceps. The application of the blades is easy, and the extraction of the head is performed in the same way as during the last stage of a high-forceps delivery.

Forceps in Breech Labors.—The forceps are devised to fit the child's head, but they are sometimes applied to the breech when impacted. The blades are applied either over the trochanters or over the sacrum and posterior part of thigh according as rotation has or has not taken place. The first pulls must be gentle as the blades are apt to slip; axis traction is particularly useful in these cases.

Prognosis in Forceps Operations.—Low forceps should cause no danger either to mother or child, but the high operation is not to be undertaken lightly. The dangers to the mother are sepsis and injury to the soft parts; to the child the long and severe compression often proves fatal.

Version.—Version or turning is an operation which alters the position of the fœtus in utero so that the presenting part is changed and a different pole of the fœtal ellipse is made to occupy the lower segment. There are three varieties of version: (1) Cephalic, when the head is brought to the internal os; (2) pelvic, in which the breech is made to present itself; (3) podalic, when one or both feet are pulled into the vagina. According to the nature of the manipulations used in its performance, version is divided into external, internal, and combined.

Cephalic Version.—Theoretically this form of version should be performed in all cases of breech and transverse presentation, provided there is no need of immediate delivery and narrowing of the pelvis is absent. The advantage is that there results a normal presentation; but, unfortunately, the field for its employment is limited. It can be carried out only when the liquor amnii is present or immediately after the rupture of the membranes. To perform external cephalic version, the patient is put in the lithotomy position with knees and thighs well flexed. One hand is placed over the head and the other over the breech; then by a succession of gentle impulses the head is pushed toward the pelvis and the breech toward the fundus. During a uterine contraction all efforts at turning should cease, the operator only attempting to hold the fœtus stationary. When the head has once entered the pelvis pads should be placed on either side of the abdomen until engagement has taken place. The *combined method* is known as the bipolar method of Braxton Hicks, and is carried out as follows: The patient is anæsthetized and placed in the lithotomy position; the bladder and rectum must be emptied. After the parts have been rendered aseptic, the disinfected hand is passed into the vagina and one or two fingers into the cervix. The presenting part is pushed away from the internal os in a direction toward the breech, while the outside hand forces the head toward the pelvis. When the fœtus lies obliquely the operator uses externally the hand which corresponds to the position of the head. By the conjoined action of the internal and external hand the head is gradually carried into the pelvis.

Pelvic Version.—This operation is not often performed, as podalic version has largely taken its place. It is indicated in cases in which there is slight pelvic narrowing and no need of immediate delivery, also in transverse presentation when the breech is situated lower than the head. It is carried out by the external and combined methods in the same way as described under Cephalic Version.

Podalic Version.—This is the most common form of version. The indications are: malpresentations and malpositions, minor degrees of pelvic narrowing, especially of the flat type in which this operation may compete with symphyseotomy. A conjugate of three and three-fourth inches is placed as the lowest limit for the elective operation; this limit may be reduced to three inches if the woman be placed in Walcher's position. Podalic version is also indicated in emergencies such as prolapse of the cord and placenta prævia. The contraindications are tetanic contraction of the uterus with marked thinning of the lower segment, rupture of the uterus, impaction of the presenting part, and extreme contraction of the pelvis. The difficulty of the operation increases according to the length of time which has elapsed since the rupture of the membranes. The chief dangers are rupture of the uterus, sepsis, and constriction of the child's neck by an imperfectly dilated cervix. Podalic version is carried out by both the combined and the internal methods. The *Combined* or *Bipolar Method* of Hicks: The first part of the operation is performed in the same way as that described in treating of cephalic version, the breech instead of the head being forced into the pelvis. As soon as a knee or foot is felt opposite the internal os the membranes are ruptured, the extremity is seized and brought into the vagina, and the version is completed by traction upon the leg thus brought down.

Internal Podalic Version.—The bipolar method becomes impossible as soon as the membranes have ruptured and the uterus is closed down upon the fœtus. The hand is introduced into the uterus, one or both feet are seized, and the turning is made by traction, while the external hand makes counter-pressure upon the abdomen. The important points in the technique are as follows: Place the woman in the lithotomy position, empty the bladder and rectum, use an anæsthetic, and carry out strict asepsis. Make sure of the presentation and position, and see that the child is alive and in no immediate danger. Do the version as early as possible after rupture of the membranes. Introduce the hand corresponding to the position of the feet. If the membranes are unruptured, do not rupture them until the feet are reached. Grasp one or both feet, and during the traction keep them in line with the fœtal ovoid. If the hand or arm is delivered, put a tape around it and keep the extremity alongside the trunk.

Extraction after Version.—Usually the child is immediately delivered, after internal podalic version, by pulling successively upon the legs and trunk, the line of traction being directly downward toward the floor until the scapulæ appear. The body of the trunk should be covered with a cloth both for the sake of warmth and to prevent the operator's hands from slipping. The next step is the *freeing of the arms* which have dragged behind and become extended alongside the head. The posterior arm should be freed first in the following manner: The operator holds the child's legs near the malleoli and forcibly swings the trunk upward and outward over the thigh of the mother, keeping the back of the child anterior. If the right fœtal arm is posterior, the trunk is swung over the mother's right thigh and vice versa. The operator passes two fingers over the posterior shoulder into the vagina until he can reach the forearm and sweep it across the child's face by flexion, finally delivering it by extension. The trunk is then swung in the opposite direction, and the other arm delivered in the same way.

Extraction of the Head.—In the delivery of the head firm pressure from above by the hands of an assistant is most important. The child should be made to straddle the left arm of the operator, two fingers being inserted into the mouth to maintain flexion; the fingers of the right hand are laid across the shoulders. Traction is first made downward and then the face carried over the perineum by swinging the child's body up over the abdomen of the mother. If the pelvis is of the flat type, the head should be rotated into the transverse diameter of the inlet. When necessary Walcher's position may be employed. *Prague Method:* The feet are grasped in one hand, and the fingers of the other hand are placed over the child's clavicles; the feet are carried upward while the fingers on the shoulders act as a fulcrum around which the head swings. *Deventer's Method:* No attention is paid to the arms which are left alongside of the head. Tractions are made upon the feet and shoulders directly downward and then the child is swung under the mother's buttocks. This method is said to be very speedy in appropriate cases. Forceps may be applied to the child's head by passing the blades underneath the elevated

trunk. Extraction, as a rule, should not be attempted until the cervix is dilatable, having been rendered so either by nature or by the manual efforts of the operator. Forceps is said to be particularly useful when there is constriction at the cervix. After the extraction of the arms, the head must be delivered in from three to five minutes at the longest if a living child is to be obtained.

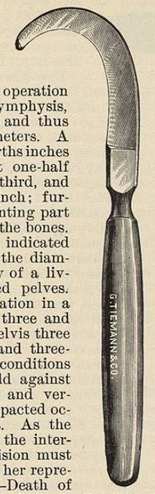

Fig. 3612.—Galbiati's Knife for Symphyseotomy.

Symphyseotomy.—This is an operation for cutting through the pubic symphysis, allowing the bones to separate, and thus increasing all the pelvic diameters. A separation of two and three-fourths inches increases the conjugate about one-half inch, the oblique one and one-third, and the transverse a little over one inch; furthermore, a portion of the presenting part may enter the opening between the bones. *Indications.*—The operation is indicated whenever a slight increase in the diameters will permit of the delivery of a living child, hence in contracted pelves. The lowest limit for the operation in a generally contracted pelvis is three and three-fourths inches; in a flat pelvis three inches (some authors say two and three-fourths). Thus under certain conditions symphyseotomy enters the field against Cæsarean section, craniotomy, and version. Other indications are impacted occiput posterior and chin cases. As the operation is designed solely in the interests of the child, the final decision must usually rest with the woman or her representative. *Contraindications.*—Death of the fœtus, the existence of ankylosis of one or both sacro-iliac joints. The operation should not be performed before the cervix is dilated or dilatable.

Methods of Operating.—The open or direct method should be avoided, as the wound is so situated that septic infection is wellnigh certain. The instruments required are the Galbiati or Morisani sickle-shaped knife, a blunt-pointed bistoury, scalpel, hæmostatic forceps, needles and needle-holder, silkworm gut, metal catheter, iodoform gauze, adhesive plaster, dressings, and a strong binder. Sometimes there is difficulty in cutting through the symphysis (usually because the operator misses the joint), so a chain-saw should be at hand. The patient should be anæsthetized, abdomen and vulva cleansed and shaved, the bladder and rectum emptied. An incision about two inches long is made just above the upper border of the symphysis and the attachments of the recti muscles cut sufficiently to permit the introduction of the left forefinger behind the symphysis. The catheter is inserted into the bladder and the urethra and bladder are depressed downward and to the right. The sickle-shaped knife is passed along the left index finger and hooked under the symphysis; by a sawing motion the joint is cut through in a direction from below upward and from within outward. If a few fibres of the ligament are missed they can be cut with the bistoury. The wound is now packed with gauze to control the hemorrhage and the catheter is removed. The child is delivered by means of the axis-traction forceps while two assistants support the sides of the pelvis to prevent excessive separation of the bones. An excellent method of operating is the *subcutaneous*, as advocated by Dr. E. A. Ayers, of New York. He makes an incision under the elevated clitoris, inserts a probe-pointed bistoury, and cuts through the joint from above downward and from behind forward, the left index finger being in the vagina and pressed against the posterior groove of the joint to serve as a guide.

After-Treatment.—The placenta is expressed and uterine contractions are secured as after normal labor. The catheter is reintroduced to hold the bladder and urethra away while the pubic bones are pressed together, the abdominal wound is sutured with silkworm gut and a broad strip of adhesive plaster passed is about the pelvis. The woman must be confined to bed for at least three weeks and the most scrupulous cleanliness observed. Unless the suspended bed of Dr. Ayers be used, the care of the bowels and bladder is a very troublesome and difficult matter. The patient usually requires catheterization for a certain length of time. The dangers of the operation are sepsis, hemorrhages, development of fistulæ, and lacerations of the soft parts, all avoidable with proper care. In a very few cases undue amount of motility at the symphysis has remained and the sacro-iliac joints have been injured by permitting the separation of the bones beyond three inches.

Prognosis.—The general mortality is given as from eight to twelve per cent., but many of these fatal cases were operated upon after the patient was already exhausted or septic. Ayers has reported thirteen cases without the death of a mother, and eleven children saved. As the chief danger is sepsis, there should be no maternal mortality when the operation is performed under favorable conditions, and, for the average practitioner, it is an easier operation than either craniotomy or Cæsarean section. The fœtal mortality is not the result of the operation, but of the antecedent conditions.

Embryotomy.—This term includes all operations designed to reduce the bulk of the fœtus, namely, craniotomy, decapitation, and evisceration.

Craniotomy.—This operation diminishes the size of the fœtal head. The indications are: Death of the fœtus. If the fœtus is already dead, there is no reason why the suffering of the mother should not be shortened and the case concluded as rapidly as possible, even if the parturient canal is of normal calibre. Contracted pelvis: two and one-half inches in the conjugate is placed as the lowest limit, and even before this limit is reached the operation may be more dangerous for the mother than Cæsarean section. Obstruction of the canal by tumors, monstrosities, large size of the fœtal head, and impacted malpositions of the fœtal head are other indications. The sacrifice of a normal child's life is seldom justifiable when the very favorable results of Cæsarean section and symphyseotomy are considered. How far the physician should go in carrying out the wishes of the patient or her friends is an individual question of ethics. Instruments required for the operation are: volsella forceps, perforator, cranioclast or cephalotribe, metal catheter, and Davidson syringe. The patient is anæsthetized and prepared as for the application of forceps; the fœtal head is steadied by grasping the scalp with the volsella forceps, and the skull is perforated. For this purpose there are several instruments, such as Blot's perforator, Smellie's scissors, and Braun's trephine; this latter instrument is very satisfactory when the head presents, as it removes a button of bone. When the scissors are used, they are thrust through a suture or fontanel and then opened in various directions to enlarge the hole. For the after-coming head the point of selection is the occipito-atloid ligament, but it may be necessary to perforate through the lambdoid suture, near the ear, or even beneath the chin. After the perforation is completed the brain substance is broken up and washed out by means of the catheter. Extraction of the head is performed in one of two ways, either with the cranioclast or with the cephalotribe. When the cranioclast is used

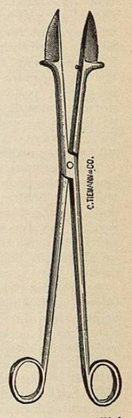

Fig. 3613.—Smellie's Scissors.

one blade is inserted into the opening in the skull, the other blade grasping the head over the face or ear; the handles are brought together by means of a nut and screw and the head is delivered by traction; as the skull is empty the head undergoes compression and is moulded in obedience to the pressure of the parturient canal. The cephalotribe is applied like the ordinary forceps, and when the handles are screwed together the base of the skull is crushed. Tarnier's cephalotribe has a perforator combined with it, but the crushing usually is unnecessary. Before the performance of craniotomy the cervix must either be dilated or dilatable. Apart from the danger of sepsis, the soft parts of the mother may be severely injured in cases of extreme contraction of the pelvic canal.

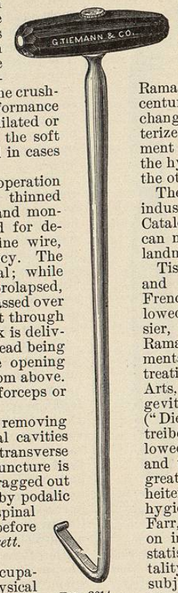

Fig. 3614.—Blunt Hook.

Decapitation.—The indications for this operation are impacted shoulder presentations with thinned lower uterine segment, interlocked twins, and monstrosities. The usual instrument employed for decapitation is Braun's hook, but scissors, fine wire, or even cord can be employed in an emergency. The patient is anæsthetized and prepared as usual; while an assistant pulls down upon an arm, if prolapsed, the hook, guided by the internal finger, is passed over the neck of the fœtus and the tissues are cut through by a series of twisting motions. The trunk is delivered by traction upon an arm or leg; the head being extracted by hooking one finger into the opening at the base of the skull aided by pressure from above. In difficult cases the head is seized in the forceps or cephalotribe.

Evisceration.—This operation consists in removing the contents of the thoracic and abdominal cavities and is indicated in some neglected cases of transverse presentation and in monstrosities. The puncture is made with the scissors and the viscera are dragged out with the hand or blunt hook; delivery is by podalic version. In difficult cases the child's spinal column is cut and the body doubled up before extracting.

Montgomery A. Crockett.

OCCUPATION, HYGIENE OF.—By "occupation" we mean the regular use of our physical functions and mental faculties in business and employment for remuneration, comfort, and luxuries. The functional activity of our organs in a normal way is a physiological condition of health; the disuse, more or less prolonged, of any organ being, as a rule, followed by atrophical changes. While the normal pursuit of occupation is therefore a condition of health, as well as a corollary of economic life, there have always existed, in occupations, certain factors which are productive of pathological changes.

The medicine of antiquity and of the Mediæval Ages ignored the problem of the injurious influence of certain trades on health, partly because these trades were pursued by the lower classes and the slaves, whose health was of no special consideration to the ruling classes, partly because the most injurious effects of occupation on health are but a product of the modern system of industry.

Apart from the few hints in the works of Hippocrates, Celsus, and others, and the mention by Pliny of the "diseases of the slave," we find nothing on the subject of the relations of occupation to health until we come to the seventeenth century, in the latter half of which we first come across a notice of occupational disease in the Transactions of the Royal Society of England, in which we find many pertinent observations on the effects of lead and coal mining, manufacturing of mirrors, etc., on the health of the operatives. To Italy, however, is due the great credit of the first attempt at a detailed description of the evils of certain occupations, the treatise of Bernardo Ramazzini, "De Morbis Artificum Diatriba," published in Modena in 1700, and soon after translated into many languages, being the first work accurately and vividly to describe the special effects of each occupation on health. Ramazzini laid the foundation for all further investigations on the subject, and it is no detraction from his deserved reputation that his book partly suffers from the superstitions and ignorance of his age; indeed we must feel respect and admiration for the many excellent and true observations, and the systematic exposition of the injurious effects of occupations which are found, for the first time in medical literature, in his work.

More than two centuries have passed since Ramazzini's epoch-making work was published—centuries not only full of remarkable revolutionary changes in trades and industries, but also characterized by a no less wonderful, progressive development of the sciences, among which the study of the hygiene of occupation has kept equal pace with the other branches of medical research.

The list of monographs, articles, and books on industrial hygiene fills many pages of the "Index Catalogue of the Surgeon-General's Library," and I can make mention here of only the more important landmarks on the subject in medical literature:—

Tissot's work on "Diseases Incident to Literary and Sedentary Persons," published in 1768 in French, was the next important book; it was followed nearly a half-century later by that of Patissier, who, however, gave but a republication of Ramazzini's work with additional notes and commentaries. After these follow, in succession, the treatises of C. Turner Thacrah ("The Effects of the Arts, Trades, and Professions on Health and Longevity," published in 1831), and of A. C. Halfort ("Die Krankheiten der Kuenstler und Gewerbetreibenden," published in 1845). These were followed by the works of Lévy, Tardieu, and Layet, and then finally, in the year 1871, by that of the great epoch-making work of Hirt—"Die Krankheiten der Arbeiter"—which first placed industrial hygiene on a true scientific basis. In England, Farr, Chadwick, Simon, Ogle, and others worked on in the same line, giving special attention to the statistical part of the subject of occupational mortality and morbility. Of the later works on the subject, we can mention only the more systematic treatises of Popper, Eulenburg, Merkel, Albrecht, Arlidge, the volume on "Gewerbehygiene" in Veyl's "Handbuch der Hygiene," the work by Thomas Oliver ("Dangerous Trades," published in London, 1902), and the latest work just published in Germany, O. Dammer's "Handbuch der Arbeiter Wohlfahrt."

The immense bibliography and the vast extent of the subject matter of industrial hygiene render any attempt to review or even to summarize our knowledge of this branch of medical science within the limits of a short article, a very ungrateful task, it being utterly impossible to do justice to it under such restrictions.

I have decided to abandon the alphabetical order of treatment by "trades," handed down by Ramazzini, and adopted by the writer on this subject in the former edition of this HANDBOOK, and I shall treat the subject matter under the following heads: Occupational Mortality Statistics; The Diseases of Occupation; The Worker; The Workplace; The Conditions of Work; The Processes of Work; Prophylaxis; and, last, "Offensive Trades."

Occupational Mortality Statistics.

Occupation is a potent factor in the determination of human longevity. If we deduct from man's life the time of infancy and childhood, and the hours devoted to sleep, the greatest part of it is spent within the periods of industrial activity, and is necessarily largely influenced by occupation. The relative number of those who die while in pursuit of their occupations bears an important relation to the healthfulness of the occupations. Moreover, if the figures revealed by the relative mortality statistics corroborate the scientific *a priori* deductions from the study of the processes of occupations and their pathological influences, we then have quite a valuable criterion of the influence of the different trades on the lives of the operatives. Herein lies the importance of mortality statistics, as determined by occupations. In order, however, that these statistics shall have any scientific value, they must cover large periods, embrace great numbers, include various races and countries, and be properly prepared and tested. For it is evident that there are a number of difficulties greatly invalidating the conclusions drawn from occupational mortality statistics. These are as follows:

First, occupation, while playing an important rôle in human life, is, nevertheless, only one of the many factors influencing it, there being a great number of others, such as race, country, climate, heredity, geographical, economic, political, and other conditions, each of which undoubtedly affects the lives of operatives; and it is exceedingly difficult to differentiate the causative influences of occupation on longevity from those of all other factors.

Second, there are under the modern system of subdivision of labor several thousands of special branches of trades and industries, only a very few of which, however, and these the most general, being, as a rule, mentioned or tabulated in the mortality statistics. Thus there are about half a hundred occupations in Ogle's tables, not many more in Bertillon's; and in the last (twelfth) census of the United States there are 140 groups, 70 of which are further subdivided, making the whole number in the last census 303. It is obvious that each of the general groups of occupations may embrace a large number of minor trades, each of which will have a different bearing on health and life, thus greatly invalidating the deductions from the general tables.

Third, in our modern industrial production, there are very few trades which are hereditary, as the feudal guilds were, and in which the operatives remained during their whole lives. The greatest number of industries constantly change their *personnel*, most individuals pursuing several trades successively; and the occupation in which they happen to die gives little indication of the one in which they may have spent the greatest part of their lives, and where they perchance had received the injuries to health to which they subsequently succumbed.

Fourth, certain trades can be pursued only by very strong and healthy individuals; while others, being comparatively light, can be carried on by the physically weak and feeble. It is, therefore, manifestly incorrect to base deductions on occupational mortality statistics, seeing that the primary factors (*i.e.*, the workers) are not on an equal basis as to health. All the above considerations make it incumbent upon us to regard occupational mortality and morbility statistics with a certain suspicion, and to apportion them only such value as is warranted by the scientific deductions of the general and special characteristics of each trade, and its effect on health.

Ogle's statistics deserve the great credit attributed to them by hygienists, by reason of their careful elaboration and intelligent preparation. They have been quoted widely and are regarded as standards. I shall give Ogle's table, followed by more recent data from the last United States census, and from J. Tatham's recent morbility figures in Oliver's book.

COMPARATIVE MORTALITY OF MEN, TWENTY-FIVE TO SIXTY-FIVE YEARS OF AGE, IN DIFFERENT OCCUPATIONS, FOR THE YEARS 1881-83, BY W. OGLE, AS REPORTED IN A PAPER READ BEFORE THE SEVENTH INTERNATIONAL CONGRESS FOR HYGIENE, IN 1891.[1]

Occupations.	Comparative mortality.	Occupations.	Comparative mortality.
Clergymen*	100	Grocers	139
Gardeners	108	Fishermen	143
Farmers	114	Carpenters, joiners	148
Agricultural laborers	126	Lawyers	152
Paper-makers	129	Silk manufacturers	152

* The mortality rate of clergymen, being the lowest, is taken at 100.

OGLE'S COMPARATIVE MORTALITY TABLE.—*Continued.*

Occupations.	Comparative mortality.	Occupations.	Comparative mortality.
Drapers	159	Medical men	202
Coal miners	160	Stone & slate quarriers	202
Shoemakers	166	Bookbinders	210
Commercial travellers	171	Butchers	211
Corn millers	172	Glass workers	214
Bakers	172	Lead workers	216
Cabinetmakers	173	Cutlers	229
Masons, bricklayers	174	Brewers	245
Blacksmiths	175	Cab drivers	267
Clerks	179	Liquor dealers	274
Railway laborers	185	Filemakers	300
Gunsmiths	186	Earthenware workers	313
Wool workers	186	Cornish miners	331
Tailors	189	Costermongers, peddlers	338
Hatters	191	Inn, hotel service	397
Cotton workers	196		

OCCUPATIONAL MORTALITY TABLE ACCORDING TO THE (TWELFTH) UNITED STATES CENSUS FOR THE CENSUS YEAR OF 1900 (ONLY IN THE "REGISTRATION AREA"—TEN STATES[2]).

Occupations.	Mortality, per 1,000.	Occupations.	Mortality, per 1,000.
Mercantile and mechanics, average	12.1	Leather makers	12.3
Professional average	15.01	Tin workers	14.5
Laborers and servants	20.2	Marble & stone workers	14.9
Engineers, surveyors	8.2	Engineers, firemen	15.7
School teachers	12.2	Painters	16.2
Lawyers	17.2	Butchers	16.1
Medical men	19.9	Plasterers	17.0
Clergymen	22.5	Carpenters, joiners	17.2
Textile mill workers	8.8	Leather workers	17.5
Plumbers and gasfitters	9.1	Hat, cap makers	17.9
Shoemakers	9.4	Cabinetmakers and Upholsterers	18.0
Machinists	10.5	Blacksmiths	18.3
Iron and steel	10.7	Cigar, tobacco workers	18.7
Glass makers	10.8	Brewers, distillers	19.7
Tailors	11.8	Stone masons	19.9
Printers, pressmen	12.1	Coopers	23.8
Bakers, confectioners	12.3	Millers, flour, grist	26.6

The United States occupation-mortality statistics being only for ten States and only for one year do not have the value of Ogle's tables, which embraced several years and the whole of England and Wales.

COMPARATIVE MORTALITY FROM SPECIFIED CAUSES IN CERTAIN DUSTY OCCUPATIONS. (JOHN TATHAM.[3])

Occupations.	Comparative mortality, all causes.	Phthisis and Respiratory Diseases.		Mortality Figure.	
		Mortality figure.	Ratio.	Phthisis.	Res. pinatory diseases.
Agriculturists	602	221	100	106	115
Earthenware	1,702	1,001	453	333	668
Cutlers	1,516	900	407	382	518
Filemakers	1,810	825	373	402	423
Glass workers	1,487	740	325	295	445
Copper workers	1,381	700	317	294	406
Gunsmiths	1,298	649	294	325	325
Iron and steel	1,301	645	292	195	450
Zinc workers	1,198	587	266	240	347
Stone quarriers	1,176	576	261	269	307
Brass workers	1,088	552	250	270	373
Chimney-sweeps	1,311	551	249	260	291
Lead workers	1,783	545	247	148	397
Cotton workers	1,141	540	244	202	338
Cooper and wood turners	1,088	526	238	250	276
Rope makers	928	486	220	219	267
Masons and bricklayers	1,001	476	215	225	251
Carpet workers	873	471	213	226	245
Tin workers	994	451	204	217	234
Wool manufacturers	991	447	202	191	256
Locksmiths	925	428	194	223	205
Blacksmiths	914	392	177	159	233
Bakers and confectioners	920	392	177	185	207