VARIOUS

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THE ARMORY AT SPRINGFIELD

BY JACOB ABBOTT

SPRINGFIELD

The Connecticut river flows through the State of Massachusetts, from north to south, on a line about half way between the middle of the State and its western boundary. The valley through which the river flows, which perhaps the stream itself has formed, is broad and fertile, and it presents, in the summer months of the year, one widely extended scene of inexpressible verdure and beauty. The river meanders through a region of broad and luxuriant meadows which are overflowed and enriched by an annual inundation. These meadows extend sometimes for miles on either side of the stream, and are adorned here and there with rural villages, built wherever there is a little elevation of land – sufficient to render human habitations secure. The broad and beautiful valley is bounded on either hand by an elevated and undulating country, with streams, mills, farms, villages, forests, and now and then a towering mountain, to vary and embellish the landscape. In some cases a sort of spur or projection from the upland country projects into the valley, forming a mountain summit there, from which the most magnificent views are obtained of the beauty and fertility of the surrounding scene.

There are three principal towns upon the banks of the Connecticut within the Massachusetts lines: Greenfield on the north – where the river enters into Massachusetts from between

New Hampshire and Vermont – Northampton at the centre, and Springfield on the south. These towns are all built at points where the upland approaches near to the river. Thus at Springfield the land rises by a gentle ascent from near the bank of the stream to a spacious and beautiful plain which overlooks the valley. The town is built upon this declivity. It is so enveloped in trees that from a distance it appears simply like a grove with cupolas and spires rising above the masses of forest foliage; but to one within it, it presents every where most enchanting pictures of rural elegance and beauty. The streets are avenues of trees. The houses are surrounded by gardens, and so enveloped in shrubbery that in many cases they reveal themselves to the passer-by only by the glimpse that he obtains of a colonnade or a piazza, through some little vista which opens for a moment and then closes again as he passes along. At one point, in ascending from the river to the plain above, the tourist stops involuntarily to admire the view which opens on either side, along a winding and beautiful street which here crosses his way. It is called Chestnut-street on the right hand, and Maple-street on the left – the two portions receiving their several names from the trees with which they are respectively adorned. The branches of the trees meet in a dense and unbroken mass of foliage over the middle of the street, and the sidewalk presents very precisely the appearance and expression of an alley in the gardens of Versailles.

THE ARMORY GROUNDS

On reaching the summit of the ascent, the visitor finds himself upon an extended plain, with streets of beautiful rural residences on every hand, and in the centre a vast public square occupied and surrounded by the buildings of the Armory. These buildings are spacious and elegant in their construction, and are arranged in a very picturesque and symmetrical manner within the square, and along the streets that surround it. The grounds are shaded with trees; the dwellings are adorned with gardens and shrubbery. Broad and neatly-kept walks, some graveled, others paved, extend across the green or along the line of the buildings, opening charming vistas in every direction. All is quiet and still. Here and there a solitary pedestrian is seen moving at a distance upon the sidewalk, or disappearing among the trees at the end of an avenue; and perhaps the carriage of some party of strangers stands waiting at a gate. The visitor who comes upon this scene on a calm summer morning, is enchanted by the rural beauty that surrounds him, and by the air of silence and repose which reigns over it all. He hears the distant barking of a dog, the voices of children at play, or the subdued thundering of the railway-train crossing the river over its wooden viaduct, far down the valley – and other similar rural sounds coming from a distance through the calm morning air – but all around him and near him is still. Can it be possible, he asks, that such a scene of tranquillity and

loveliness can be the outward form and embodiment of a vast machinery incessantly employed in the production of engines of carnage and death?

It is, however, after all, perhaps scarcely proper to call the arms that are manufactured by the American government, and stored in their various arsenals, as engines of carnage and destruction. They ought, perhaps, to be considered rather as instruments of security and peace; for their destination is, as it would seem, not to be employed in active service in the performance of the function for which they are so carefully prepared; but to be consigned, when once finished, to eternal quiescence and repose. They protect by their existence, and not by their action; but in order that this, their simple existence, should be efficient as protection, it is necessary that the instruments themselves should be fitted for their work in the surest and most perfect manner. And thus we have the very singular and extraordinary operation going on, of manufacturing with the greatest care, and with the highest possible degree of scientific and mechanical skill, a vast system of machinery, which, when completed, all parties concerned most sincerely hope and believe will, in a great majority of cases, remain in their depositories undisturbed forever. They fulfill their vast function by their simple existence – and thus, though in the highest degree useful, are never to be used.

THE BUILDINGS

The general appearance of the buildings of the Armory is represented in the engraving placed at the head of this article. The point from which the view is taken, is on the eastern side of the square – that is, the side most remote from the town. The level and extended landscape seen in the distance, over the tops of the buildings, is the Connecticut valley – the town of Springfield lying concealed on the slope of the hill, between the buildings and the river. The river itself, too, is concealed from view at this point by the masses of foliage which clothe its banks, and by the configuration of the land.

The middle building in the foreground, marked by the cupola upon the top of it, is called the Office. It contains the various counting-rooms necessary for transacting the general business of the Armory, and is, as it were, the seat and centre of the power by which the whole machinery of the establishment is regulated. North and south of it, and in a line with it, are two shops, called the North and South Filing Shops, where, in the several stories, long ranges of workmen are found, each at his own bench, and before his own window, at work upon the special operation, whatever it may be, which is assigned to him. On the left of the picture is a building with the end toward the observer, two stories high in one part, and one story in the other part. The higher portion – which in the view is the portion

nearest the observer – forms the Stocking Shop, as it is called; that is the shop where the stocks are made for the muskets, and fitted to the locks and barrels. The lower portion is the Blacksmith's Shop. The Blacksmith's Shop is filled with small forges, at which the parts of the lock are forged. Beyond the Blacksmith's Shop, and in a line with it, and forming, together with the Stocking Shop and the Blacksmith's Shop, the northern side of the square, are several dwelling-houses, occupied as the quarters of certain officers of the Armory. The residence of the Commanding Officer, however, is not among them. His house stands on the west side of the square, opposite to the end of the avenue which is seen opening directly before the observer in the view. It occupies a very delightful and commanding situation on the brow of the hill, having a view of the Armory buildings and grounds upon one side, and overlooking the town and the valley of the Connecticut on the other.

A little to the south of the entrance to the Commanding Officer's house, stands a large edifice, called the New Arsenal. It is the building with the large square tower – seen in the view in the middle distance, and near the centre of the picture. This building is used for the storage of the muskets during the interval that elapses from the finishing of them to the time when they are sent away to the various permanent arsenals established by government in different parts of the country, or issued to the troops. Besides this new edifice there are two or three other buildings which are used for the storage of finished muskets,

called the Old Arsenals. They stand in a line on the south side of the square, and may be seen on the left hand, in the view. These buildings, all together, will contain about five hundred thousand muskets. The New Arsenal, alone, is intended to contain three hundred thousand.

THE WATER SHOPS

Such is the general arrangement of the Arsenal buildings, "on the hill." But it is only the lighter work that is done here. The heavy operations, such as rolling, welding, grinding, &c., are all performed by water-power. The stream which the Ordnance Department of the United States has pressed into its service to do this work, is a rivulet that meanders through a winding and romantic valley, about half a mile south of the town. On this stream are three falls, situated at a distance perhaps of half a mile from each other. At each of these falls there is a dam, a bridge, and a group of shops. They are called respectively the Upper, Middle, and Lower Water Shops. The valley in which these establishments are situated is extremely verdant and beautiful. The banks of the stream are adorned sometimes with green, grassy slopes, and sometimes with masses of shrubbery and foliage, descending to the water. The road winds gracefully from one point of view to another, opening at every turn some new and attractive prospect. The shops and all the hydraulic works are very neatly and very substantially constructed, and are kept in the most perfect order: so that the scene, as it presents itself to the party of visitors, as they ride slowly up or down the road in their carriage, or saunter along upon the banks of the stream on foot, forms a very attractive picture.

THE MUSKET BARREL

The fundamental, and altogether the most important operation in the manufacture of the musket, is the formation of the barrel; for it is obvious, that on the strength and perfection of the barrel, the whole value and efficiency of the weapon when completed depends. One would suppose, that the fabrication of so simple a thing as a plain and smooth hollow tube of iron, would be a very easy process; but the fact is, that so numerous are the obstacles and difficulties that are in the way, and so various are the faults, latent and open, into which the workman may allow his work to run, that the forming of the barrel is not only the most important, but by far the most difficult of the operations at the Armory – one which requires the most constant vigilance and attention on the part of the workman, during the process of fabrication, and the application of multiplied tests to prove the accuracy and correctness of the work at every step of the progress of it, from beginning to end.

The barrels are made from plates of iron, of suitable form and size, called *scalps* or barrel plates. These scalps are a little more than two feet long, and about three inches wide. The barrel when completed, is about three feet six inches long, the additional length being gained by the elongating of the scalp under the hammer during the process of welding. The scalps are heated, and then rolled up over an iron rod, and the edges

being lapped are welded together, so as to form a tube of the requisite dimensions – the solid rod serving to preserve the cavity within of the proper form. This welding of the barrels is performed at a building among the Middle Water Shops. A range of tilt hammers extend up and down the room, with forges in the centre of the room, one opposite to each hammer, for heating the iron. The tilt hammers are driven by immense water-wheels, placed beneath the building – there being an arrangement of machinery by which each hammer may be connected with its moving power, or disconnected from it, at any moment, at the pleasure of the workman. Underneath the hammer is an anvil. This anvil contains a die, the upper surface of which, as well as the under surface of a similar die inserted in the hammer, is formed with a semi-cylindrical groove, so that when the two surfaces come together a complete cylindrical cavity is formed, which is of the proper size to receive the barrel that is to be forged. The workman heats a small portion of his work in his forge, and then standing directly before the hammer, he places the barrel in its bed upon the anvil, and sets his hammer in motion, turning the barrel round and round continually under the blows. Only a small portion of the seam is closed at one heat, *eleven* heats being required to complete the work. To effect by this operation a perfect junction of the iron, in the overlapping portions, so that the substance of iron shall be continuous and homogeneous throughout, the same at the junction as in every other part, without any, the least, flaw,

or seam, or crevice, open or concealed, requires not only great experience and skill, but also most unremitting and constant attention during the performance of the work. Should there be any such flaw, however deeply it may be concealed, and however completely all indications of it may be smoothed over and covered up by a superficial finishing, it is sure to be exposed at last, to the mortification and loss of the workman, in the form of a great gaping rent, which is brought out from it under the inexorable severity of the test to which the work has finally to be subjected.

RESPONSIBILITY OF THE WORKMEN

We say to the *loss* as well as to the mortification of the workman, for it is a principle that pervades the whole administration of this establishment, though for special reasons the principle is somewhat modified in its application to the welder, as will hereafter be explained, that each workman bears the whole loss that is occasioned by the failure of his work to stand its trial, from whatever cause the failure may arise. As a general rule each workman stamps every piece of work that passes through his hands with his own mark – a mark made indelible too – so that even after the musket is finished, the history of its construction can be precisely traced, and every operation performed upon it, of whatever kind, can be carried home to the identical workman who performed it. The various parts thus marked are subject to very close inspection, and to very rigid tests, at different periods, and whenever any failure occurs, the person who is found to be responsible for it is charged with the loss. He loses not only his own pay for the work which he performed upon the piece in question, but for the whole value of the piece at the time that the defect is discovered. That is, he has not only to lose his own labor, but he must also pay for all the other labor expended upon the piece, which through the fault of his work becomes useless. For example, in the case of the barrel,

there is a certain amount of labor expended upon the iron, to form it into scalps, before it comes into the welder's hands. Then after it is welded it must be bored and turned, and subjected to some other minor operations before the strength of the welding can be proved. If now, under the test that is applied to prove this strength – a test which will be explained fully in the sequel – the work gives way, and if, on examination of the rent, it proves to have been caused by imperfection in the welding, and not by any original defect in the iron, the welder, according to the general principle which governs in this respect all the operations of the establishment, would have to lose not only the value of his own labor, in welding the barrel, but that of all the other operations which had been performed upon it, and which were rendered worthless by his agency. It is immaterial whether the misfortune in such cases is occasioned by accident, or carelessness, or want of skill. In either case the workman is responsible. This rule is somewhat relaxed in the case of the welder, on whom it would, perhaps, if rigidly enforced, bear somewhat too heavily. In fact many persons might regard it as a somewhat severe and rigid rule in any case – and it would, perhaps, very properly be so considered, were it not that this responsibility is taken into the account in fixing the rate of wages; and the workmen being abundantly able to sustain such a responsibility do not complain of it. The system operates on the whole in the most salutary manner, introducing, as it does, into every department of the Armory, a spirit of attention, skill, and fidelity, which marks

even the countenances and manners of the workmen, and is often noticed and spoken of by visitors. In fact none but workmen of a very high character for intelligence, capacity, and skill could gain admission to the Armory – or if admitted could long maintain a footing there.

The welders are charged one dollar for every barrel lost through the fault of their work. They earn, by welding, twelve cents for each barrel; so that by spoiling one, they lose the labor which they expend upon eight. Being thus rigidly accountable for the perfection of their work, they find that their undivided attention is required while they are performing it; and, fortunately perhaps for them, there is nothing that can well divert their attention while they are engaged at their forges, for such is the incessant and intolerable clangor and din produced by the eighteen tilt hammers, which are continually breaking out in all parts of the room, into their sudden paroxysms of activity, that every thing like conversation in the apartment is almost utterly excluded. The blows of the hammers, when the white-hot iron is first passed under them and the pull of the lever sets them in motion, are inconceivably rapid, and the deafening noise which they make, and the showers of sparks which they scatter in every direction around, produce a scene which quite appalls many a lady visitor when she first enters upon it, and makes her shrink back at the door, as if she were coming into some imminent danger. The hammers strike more than six hundred blows in a minute, that is more than *ten in every second*; and the noise

produced is a sort of rattling thunder, so overpowering when any of the hammers are in operation near to the observer, that the loudest vociferation uttered close to the ear, is wholly inaudible. Some visitors linger long in the apartment, pleased with the splendor and impressiveness of the scene. Others consider it frightful, and hasten away.

FINISHING OPERATIONS. – BORING

From the Middle Water Shops, where this welding is done, the barrels are conveyed to the Upper Shops, where the operations of turning, boring and grinding are performed. Of course the barrel when first welded is left much larger in its outer circumference, and smaller in its bore, than it is intended to be when finished, in order to allow for the loss of metal in the various finishing operations. When it comes from the welder the barrel weighs over seven pounds: when completely finished it weighs but about four and a half pounds, so that nearly one half of the metal originally used, is cut away by the subsequent processes.

The first of these processes is the boring out of the interior. The boring is performed in certain machines called boring banks. They consist of square and very solid frames of iron, in which, as in a bed, the barrel is fixed, and there is bored out by a succession of operations performed by means of certain tools which are called augers, though they bear very little resemblance to the carpenter's instrument so named. These augers are short square bars of steel, highly polished, and sharp at the edges – and placed at the ends of long iron rods, so that they may pass entirely through the barrel to be bored by them, from end to end. The boring parts of these instruments, though they are in appearance only plain bars of steel with straight and parallel sides, are really somewhat smaller at the outer than at the inner end, so that,

speaking mathematically, they are truncated pyramids, of four sides, though differing very slightly in the diameters of the lower and upper sections.

The barrels being fixed in the boring bank, as above described, the end of the shank of the auger is inserted into the centre of a wheel placed at one end of the bank, where, by means of machinery, a slow rotary motion is given to the auger, and a still slower progressive motion at the same time. By this means the auger gradually enters the hollow of the barrel, boring its way, or rather enlarging its way by its boring, as it advances. After it has passed through it is withdrawn, and another auger, a very little larger than the first is substituted in its place; and thus the calibre of the barrel is gradually enlarged, *almost* to the required dimensions.

Almost, but not quite; for in the course of the various operations which are subsequent to the boring, the form of the interior of the work is liable to be slightly disturbed, and this makes it necessary to reserve a portion of the surplus metal within, for a final operation. In fact the borings to which the barrel are subject, alternate in more instances than one with other operations, the whole forming a system far too nice and complicated to be described fully within the limits to which we are necessarily confined in such an article as this. It is a general principle however that the inside work is kept always in advance of the outside, as it is the custom with all machinists and turners to adopt the rule that is so indispensable and excellent in morals,

namely, to make all right first within, and then to attend to the exterior. Thus in the case of the musket barrel the bore is first made correct. Then the outer surface of the work is turned and ground down to a correspondence with it. The reverse of this process, that is first shaping the outside of it, and then boring it out within, so as to make the inner and outer surfaces to correspond, and the metal every where to be of equal thickness, would be all but impossible.

TURNING

After the boring, then, of the barrel, comes the turning of the outside of it. The piece is supported in the lathe by means of mandrels inserted into the two ends of it, and there it slowly revolves, bringing all parts of its surface successively under the action of a tool fixed firmly in the right position for cutting the work to its proper form. Of course the barrel has a slow progressive as well as rotary motion during this process, and the tool itself, with the rest in which it is firmly screwed, advances or recedes very regularly and gradually, in respect to the work, as the process goes on, in order to form the proper taper of the barrel in proceeding from the breech to the muzzle. The main work however in this turning process is performed by the rotation of the barrel. The workman thus treats his material and his tools with strict impartiality. In the *boring*, the piece remains at rest, and the tool does its work by revolving. In the *turning*, on the other hand, the *piece* must take its part in active duty, being required to revolve against the tool, while the tool itself remains fixed in its position in the rest.

Among the readers of this article there will probably be many thousands who have never had the opportunity to witness the process of turning or boring iron, and to them it may seem surprising that any tool can be made with an edge sufficiently enduring to stand in such a service. And it is indeed true that

a cutting edge destined to maintain itself against iron must be of very excellent temper, and moreover it must have a peculiar construction and form, such that when set in its proper position for service, the cutting part shall be well supported, so to speak, in entering the metal, by the mass of the steel behind it. It is necessary, too, to keep the work cool by a small stream of water constantly falling upon the point of action. The piece to be turned, moreover, when of iron, must revolve very slowly; the process will not go on successfully at a rapid rate; though in the case of wood the higher the speed at which the machinery works, within certain limits, the more perfect the operation. In all these points the process of turning iron requires a very nice adjustment; but when the conditions necessary to success are all properly fulfilled, the work goes on in the most perfect manner, and the observer who is unaccustomed to witness the process is surprised to see the curling and continuous shaving of iron issuing from the point where the tool is applied, being cut out there as smoothly and apparently as easily as if the material were lead.

THE STRAIGHTENING

One of the most interesting and curious parts of the process of the manufacture of the barrel, is the straightening of it. We ought, perhaps, rather to say the straightenings, for it is found necessary that the operation should be several times performed. For example, the barrel must be straightened before it is turned, and then, inasmuch as in the process of turning it generally gets more or less *sprung*, it must be straightened again afterward. In fact, every important operation performed upon the barrel is likely to cause some deflection in it, which requires to be subsequently corrected, so that the process must be repeated several times. The actual work of straightening, that is the mechanical act that is performed, is very simple – consisting as it does of merely striking a blow. The whole difficulty lies in determining when and where the correction is required. In other words, the *making straight* is very easily and quickly done; the thing attended with difficulty is to find out when and where the work is crooked; for the deflections which it is thus required to remedy, are so extremely slight, that all ordinary modes of examination would fail wholly to detect them; while yet they are sufficiently great to disturb very essentially the range and direction of the ball which should issue from the barrel, affected by them.

The above engraving represents the workman in the act of

examining the interior of a barrel with a view to ascertaining whether it be straight. On the floor, in the direction toward which the barrel is pointed, is a small mirror, in which the workman sees, through the tube, a reflection of a certain pane of glass in the window. The pane in question is marked by a diagonal line, which may be seen upon it, in the view, passing from one corner to the other. This diagonal line now is reflected by the mirror into the bore of the barrel, and then it is reflected again to the eye of the observer; for the surface of the iron on the inside of the barrel is left in a most brilliantly polished condition, by the boring and the operations connected therewith. Now the workman, in some mysterious way or other, detects the slightest deviation from straightness in the barrel, by the appearance which this reflection presents to his eye, as he looks through the bore in the manner represented in the drawing. He is always ready to explain very politely to his visitor exactly how this is done, and to allow the lady to look through the tube and see for herself. All that she is able to see, however, in such cases is a very resplendent congeries of concentric rings, forming a spectacle of very dazzling brilliancy, which pleases and delights her, though the mystery of the reflected line generally remains as profound a mystery after the observation as before. This is, in fact, the result which might have been expected, since it is generally found that all demonstrations and explanations relating to the science of optics and light, addressed to the uninitiated, end in plunging them into greater darkness than ever.

The only object which the mirror upon the floor serves, in the operation, is to save the workman from the fatigue of holding up the barrel, which it would be necessary for him to do at each observation, if he were to look at the window pane directly. By having a reflecting surface at the floor he can point the barrel downward, when he wishes to look through it, and this greatly facilitates the manipulation. There is a rest, too, provided for the barrel, to support it while the operator is looking through. He plants the end of the tube in this rest, with a peculiar grace and dexterity, and then, turning it round and round, in order to bring every part of the inner surface to the test of the reflection, he accomplishes the object of his scrutiny in a moment, and then recovering the barrel, he lays it across a sort of anvil which stands by his side, and strikes a gentle blow upon it wherever a correction was found to be required. Thus the operation, though it often seems a very difficult one for the visitor to understand, proves a very easy one for the workman to perform.

OLD MODE OF STRAIGHTENING

In former times a mode altogether different from this was adopted to test the interior rectitude of the barrel. A very slender line, formed of a hair or some similar substance, was passed through the barrel —*dropped* through, in fact, by means of a small weight attached to the end of it. This line was then drawn tight, and the workman looking through, turned the barrel round so as to bring the line into coincidence successively with every portion of the inner surface. If now there existed any concavity in any part of this surface, the line would show it by the distance which would there appear between the line itself and its reflection in the metal. The present method, however, which has now been in use about thirty years, is found to be far superior to the old one; so much so in fact that all the muskets manufactured before that period have since been condemned as unfit for use, on account mainly of the crookedness of the barrels. When we consider, however, that the calculation is that in ordinary engagements less than one out of every hundred of the balls that are discharged take effect; that is, that ninety-nine out of every hundred go wide of the mark for which they are intended, from causes that must be wholly independent of any want of accuracy in the aiming, it would seem to those who know little of such subjects, that to condemn muskets for deviating from perfect straightness by less than a hair, must be quite an

unnecessary nicety. The truth is, however, that all concerned in the establishment at Springfield, seem to be animated by a common determination, that whatever may be the use that is ultimately to be made of their work, the instrument itself, as it comes from their hands, shall be absolutely perfect; and whoever looks at the result, as they now attain it, will admit that they carry out their determination in a very successful manner.

CINDER HOLES

Various other improvements have been made from time to time in the mode of manufacturing and finishing the musket, which have led to the condemnation or alteration of those made before the improvements were introduced. A striking illustration of this is afforded by the case of what are called *cinder holes*. A cinder hole is a small cavity left in the iron at the time of the manufacture of it – the effect, doubtless, of some small development of gas forming a bubble in the substance of the iron. If the bubble is near the inner surface of the barrel when it is welded, the process of boring and finishing brings it into view, in the form of a small blemish seen in the side of the bore. At a former period in the history of the Armory, defects of this kind were not considered essential, so long as they were so small as not to weaken the barrel. It was found, however, at length that such cavities, by retaining the moisture and other products of combustion resulting from the discharge of the piece, were subject to corrosion, and gradual enlargement, so as finally to weaken the barrel in a fatal manner. It was decided therefore that the existence of cinder holes in a barrel should thenceforth be a sufficient cause for its rejection, and all the muskets manufactured before that time have since been condemned and sold; the design of the department being to retain in the public arsenals only arms of the most perfect and unexceptionable

character.

At the present time, in the process of manufacturing the barrels, it is not always found necessary to reject a barrel absolutely in every case where a cinder hole appears. Sometimes the iron may be forced in, by a blow upon the outside, sufficiently to enable the workman to bore the cinder hole out entirely. This course is always adopted where the thickness of the iron will allow it, and in such cases the barrel is saved. Where this can not be done, the part affected is sometimes cut off, and a short barrel is made, for an arm called a musketoon.

THE GRINDING

After the barrel is turned to nearly its proper size it is next to be ground, for the purpose of removing the marks left by the tool in turning, and of still further perfecting its form. For this operation immense grindstones, carried by machinery, are used, as seen in the engraving. These stones, when in use, are made to revolve with great rapidity – usually about *four hundred times in a minute*– and as a constant stream of water is kept pouring upon the part where the barrel is applied in the grinding, it is necessary to cover them entirely with a wooden case, as seen in the engraving, to catch and confine the water, which would otherwise be thrown with great force about the room. The direct action therefore of the stone upon the barrel in the process of grinding is concealed from view.

The workman has an iron rod with a sort of crank-like handle at the end of it, and this rod he inserts into the bore of the barrel which he has in hand. The rod fits into the barrel closely, and is held firmly by the friction, so that by means of the handle to the rod, the workman can turn the barrel round and round continually while he is grinding it, and thus bring the action of the stone to bear equally upon every part, and so finish the work in a true cylindrical form. One of these rods, with its handle, may be seen lying free upon the stand on the right of the picture. The workman is also provided with gauges which he applies

frequently to the barrel at different points along its length, as the work goes on, in order to form it to the true size and to the proper taper. In the act of grinding he inserts the barrel into a small hole in the case, in front of the stone, and then presses it hard against the surface of the stone by means of the iron lever behind him. By leaning against this lever with greater or less exertion he can regulate the pressure of the barrel against the stone at pleasure. In order to increase his power over this lever he stands upon a plate of iron which is placed upon the floor beneath him, with projections cast upon it to hold his feet by their friction; the moment that he ceases to lean against the lever, the inner end of it is drawn back by the action of the weight seen hanging down by the side of it, and the barrel is immediately released.

The workman *turns* the barrel continually, during the process of grinding, by means of the handle, as seen in the drawing, and as the stone itself is revolving all the time with prodigious velocity, the work is very rapidly, and at the same time very smoothly and correctly performed.

DANGER

It would seem too, at first thought, that this operation of grinding must be a very safe as well as a simple one; but it is far otherwise. This grinding room is the dangerous room – the only dangerous room, in fact, in the whole establishment. In the first place, the work itself is often very injurious to the health. The premises are always drenched with water, and this makes the atmosphere damp and unwholesome. Then there is a fine powder, which, notwithstanding every precaution, will escape from the stone, and contaminate the air, producing very serious tendencies to disease in the lungs of persons who breathe it for any long period. In former times it was customary to grind bayonets as well as barrels; and this required that the face of the stone should be fluted, that is cut into grooves of a form suitable to receive the bayonet. This fluting of the stone, which of course it was necessary continually to renew, was found to be an exceedingly unhealthy operation, and in the process of grinding, moreover, in the case of bayonets, the workman was much more exposed than in grinding barrels, as it was necessary that a portion of the stone should be open before him and that he should apply the piece in hand directly to the surface of it. From these causes it resulted, under the old system, that bayonets, whatever might have been their destination in respect to actual service against an enemy on the field, were pretty sure to be the

death of all who were concerned in making them.

The system, however, so far as relates to the bayonet is now changed. Bayonets are now "milled," instead of being ground; that is, they are finished by means of cutters formed upon the circumference of a wheel, and so arranged that by the revolution of the wheel, and by the motion of the bayonet in passing slowly under it, secured in a very solid manner to a solid bed, the superfluous metal is cut away and the piece fashioned at once to its proper form, or at least brought so near to it by the machine, as to require afterward only a very little finishing. This operation is cheaper than the other, and also more perfect in its result; while at the same time it is entirely free from danger to the workman.

No mode, however, has yet been devised for dispensing with the operation of grinding in the case of the barrel; though the injury to the health is much less in this case than in the other.

BURSTING OF GRINDSTONES

There is another very formidable danger connected with the process of grinding besides the insalubrity of the work; and that is the danger of the bursting of the stones in consequence of their enormous weight and the immense velocity with which they are made to revolve. Some years since a new method of clamping the stone, that is of attaching it and securing it to its axis, was adopted, by means of which the danger of bursting is much diminished. But by the mode formerly practiced – the mode which in fact still prevails in many manufacturing establishments where large grindstones are employed – the danger was very great, and the most frightful accidents often occurred. In securing the stone to its axis it was customary to cut a square hole through the centre of the stone, and then after passing the iron axis through this opening, to fix the stone upon the axis by wedging it up firmly with wooden wedges. Now it is well known that an enormous force may be exerted by the driving of a wedge, and probably in many cases where this method is resorted to, the stone is strained to its utmost tension, so as to be on the point of splitting open, before it is put in rotation at all. The water is then let on, and the stone becomes saturated with it – which greatly increases the danger. There are three ways by which the water tends to promote the bursting of the stone. It makes it very much heavier, and thus adds to the momentum

of its motion, and consequently to the centrifugal force. It also makes it weaker, for the water penetrates the stone in every part, and operates to soften, as it were, its texture. Then finally it swells the wedges, and thus greatly increases the force of the outward strain which they exert at the centre of the stone. When under these circumstances the enormous mass is put in motion, at the rate perhaps of five or six revolutions in a *second*, it bursts, and some enormous fragment, a quarter or a third of the whole, flies up through the flooring above, or out through a wall, according to the position of the part thrown off, at the time of the fracture. An accident of this kind occurred at the Armory some years since. One fragment of the stone struck the wall of the building, which was two or three feet thick, and broke it through. The other passing upward, struck and fractured a heavy beam forming a part of the floor above, and upset a work-bench in a room over it, where several men were working. The men were thrown down, though fortunately they were not injured. The workman who had been grinding at the stone left his station for a minute or two, just before the catastrophe, and thus his life too was saved.

POLISHING

We have said that the grinding room is the *only* dangerous room in such an establishment as this. There is one other process than grinding which was formerly considered as extremely unhealthy, and that is the process of polishing. The polishing of steel is performed by means of what are called *emery wheels*, which are wheels bound on their circumference by a band of leather, to which a coating of emery, very finely pulverized, is applied, by means of a sizing of glue. These wheels, a large number of which are placed side by side in the same room, are made to revolve by means of machinery, with an inconceivable velocity, while the workmen who have the polishing to do, taking their stations, each at his own wheel, on seats placed there for the purpose, and holding the piece of work on which the operation is to be performed, in their hands, apply it to the revolving circumference before them. The surface of the steel thus applied, receives immediately a very high polish – a stream of sparks being elicited by the friction, and flying off from the wheel opposite to the workman.

Now although in these cases the workman was always accustomed to take his position at the wheel in such a manner as to be exposed as little as possible to the effects of it, yet the air of the apartment, it was found, soon became fully impregnated with the fine emery dust, and the influence of it upon the lungs

proved very deleterious. There is, however, now in operation a contrivance by means of which the evil is almost entirely remedied. A large air-trunk is laid beneath the floor, from which the air is drawn out continually by means of a sort of fan machinery connected with the engine. Opposite to each wheel, and in the direction to which the sparks and the emery dust are thrown, are openings connected with this air-trunk. By means of this arrangement all that is noxious in the air of the room is drawn out through the openings into the air-trunk, and so conveyed away.

The sparks produced in such operations as this, as in the case of the collision of flint and steel, consist of small globules of melted metal, cut off from the main mass by the force of the friction, and heated to the melting point at the same time. These metallic scintillations were not supposed to be the cause of the injury that was produced by the operation of polishing, as formerly practiced. It was the dust of the emery that produced the effect, just as in the case of the grinding it was the powder of the stone, and not the fine particles of iron.

The emery which is used in these polishing operations, as well as for a great many similar purposes in the arts, is obtained by pulverizing an exceedingly hard mineral that is found in several of the islands of the Grecian Archipelago, in the Mediterranean. In its native state it appears in the form of shapeless masses, of a blackish or bluish gray color, and it is prepared for use by being pulverized in iron mortars. When pulverized it is washed and

sorted into five or six different degrees of fineness, according to the work for which it is wanted. It is used by lapidaries for cutting and polishing stones, by cutlers for iron and steel instruments, and by opticians for grinding lenses. It is ordinarily used in the manner above described, by being applied to the circumference of a leathern covered wheel, by means of oil or of glue. Ladies use bags filled with it, for brightening their needles.

Emery is procured in Spain, and also in Great Britain, as well as in the Islands of the Mediterranean.

PROVING

When the barrels are brought pretty nearly to their finished condition, they are to be *proved*, that is to be subjected to the test of actual trial with gunpowder. For this proving they are taken to a very strong building that is constructed for the purpose, and which stands behind the Stocking Shop. Its place is on the right in the general view of the Armory buildings, and near the foreground – though that view does not extend far enough in that direction to bring it in. The exterior appearance of this building is represented in the above engraving. It is made very strong, being constructed wholly of timber, in order to enable it to resist the force of the explosions within. There are spacious openings in lattice work, in the roof and under the eaves of the building, to allow of the escape of the smoke with which it is filled at each discharge; for it is customary to prove a large number of barrels at a time. The barrels are loaded with a very heavy charge, so as to subject them to much greater strain than they can ever be exposed to in actual service. The building on the left, in the engraving, is used for loading the barrels, and for cleaning and drying them after they are proved. The shed attached to the main building, on the right hand, contains a bank of clay, placed there to receive the bullets, with which the barrels are charged.

The arrangement of the interior of this building, as well as the manner in which the proving is performed, will be very clearly

understood by reference to the engraving below.

On the right hand end of the building, and extending quite across it from side to side, is a sort of platform, the upper surface of which is formed of cast-iron, and contains grooves in which the muskets are placed when loaded, side by side. A train of gunpowder is laid along the back side of this platform, so as to form a communication with each barrel. The train passes out through a hole in the side of the building near the door. The bank of clay may be seen sloping down from within its shed into the room on the left. The artist has represented the scene as it appears when all is ready for the discharge. The barrels are placed, the train is laid, and the proof-master is just retiring and closing the door. A moment more and there will be a loud and rattling explosion; then the doors will be opened, and as soon as the smoke has cleared away the workman will enter and ascertain the result. About one in sixty of the barrels are found to burst under the trial.

The pieces that fail are all carefully examined with a view to ascertain whether the giving way was owing to a defect in the welding, or to some flaw, or other bad quality, in the iron. The appearance of the rent made by the bursting will always determine this point. The loss of those that failed on account of bad welding is then charged to the respective operatives by whom the work was done, at a dollar for each one so failing. The name of the maker of each is known by the stamp which he put upon it at the time when it passed through his hands.

The barrels that stand this first test are afterward subjected to a second one in order to make it sure that they sustained no partial and imperceptible injury at the first explosion. This done they are stamped with the mark of approval, and so sent to the proper departments to be mounted and finished.

The bayonets, and all the other parts of which the musket is composed are subjected to tests, different in character indeed, but equally strict and rigid in respect to the qualities which they are intended to prove, with that applied to the barrel. The bayonet is very carefully gauged and measured in every part, in order to make sure that it is of precisely the proper form and dimensions. A weight is hung to the point of it to try its temper, and it is sprung by the strength of the inspector, with the point of it set into the floor, to prove its elasticity. If it is found to be tempered too high it breaks; if too low it bends. In either case it is condemned, and the workman through whose fault the failure has resulted is charged with the loss.

THE FORGING

The number of pieces which are used in making up a musket is forty-nine, each of which has to be formed and finished separately. Of these there are only two – viz., the sight and what is called the *cone-seat*, a sort of process connected with the barrel – that are permanently attached to any other part; so that the musket can at any time be separated into *forty-seven* parts, by simply turning screws, and opening springs, and then put together again as before. Most of these parts are such that they are formed in the first instance by being forged or rather *swedged*, and are afterward trimmed and finished in lathes, and milling engines, or by means of files. *Swedging*, as it is called, is the forming of irregular shapes in iron by means of dies of a certain kind, called swedges, one of which is inserted in the anvil, in a cavity made for the purpose, and the other is placed above it. Cavities are cut in the faces of the swedges, so that when they are brought together, with the end of the iron rod out of which the article to be formed between them, the iron is made to assume the form of the cavities by means of blows of the hammer upon the upper swedge. In this way shapes are easily and rapidly fashioned, which it would be impossible to produce by blows directed immediately upon the iron.

The shop where this swedging work is done at the Armory contains a great number of forges, one only of which however

is fully represented in the engraving. The apparatus connected with these forges, differing in each according to the particular operation for which each is intended, is far too complicated to be described in this connection. It can only be fully understood when seen in actual operation under the hands of the workman. The visitor however who has the opportunity to see it thus, lingers long before each separate forge, pleased with the ingenuity of the contrivances which he witnesses, and admiring the wonderful dexterity of the workman. There is no appearance of bellows at any of these works. The air is supplied to the fires by pipes ascending through the floor from a *fan blower*, as it is called, worked by machinery arranged for the purpose below.

THE STOCKING SHOP

The Stocking Shop, so called, is the department in which the *stocks* to which the barrel and the lock are to be attached, are formed and finished. The wood used for gun stocks in this country is the black walnut, and as this wood requires to be seasoned some years before it is used, an immense store of it is kept on hand at the Armory – sufficient in fact for four years' consumption. The building in which this material is stored may be seen on the right hand side in the general view placed at the head of this article. It stands off from the square, and behind the other buildings. The operations conducted in the stocking shop are exceedingly attractive to all who visit the establishment. In fact it happens here as it often does in similar cases, that that which it is most interesting to witness is the least interesting to be described. The reason is that the charm in these processes consists in the high perfection and finish of the machines, in the smoothness, grace, and rapidity of their motions, and in the seemingly miraculous character of the performances which they execute. Of such things no mere description can convey any adequate idea. They must be seen to be at all appreciated.

A gun stock, with all the innumerable cavities, grooves, perforations, and recesses necessary to be made in it, to receive the barrel, the lock, the bands, the ramrod, and the numerous pins and screws, all of which require a separate and peculiar

modification of its form, is perhaps as irregular a shape as the ingenuity of man could devise – and as well calculated as any shape could possibly be to bid defiance to every attempt at applying machinery to the work of fashioning it. The difficulties however in the way of such an attempt, insurmountable as they would at first sight seem, have all been overcome, and every part of the stock is formed, and every perforation, groove, cavity, and socket is cut in it by machines that do their work with a beauty, a grace, and a perfection, which awaken in all who witness the process, a feeling of astonishment and delight.

The general principle on which this machinery operates, in doing its work, may perhaps be made intelligible to the reader by description. The action is regulated by what are called *patterns*. These patterns are models in iron of the various surfaces of the stock which it is intended to form. Let us suppose, for example, that the large cavity intended to receive the lock is to be cut. The stock on which the operation is to be performed is placed in its bed in the machine, and over it, pendant from a certain movable frame-work of polished steel above, is the cutting tool, a sort of bit or borer, which is to do the work. This borer is made to revolve with immense velocity, and is at the same time susceptible of various other motions at the pleasure of the workman. It may be brought down upon the work, and moved there from side to side, so as to cut out a cavity of any required shape; and such is the mechanism of the machine that these vertical and lateral motions may be made very freely without at all interfering with

the swift rotation on which the cutting power of the tool depends. This is effected by causing the tool to revolve by means of small machinery within its frame, while the frame and all within it moves together in the vertical and lateral motions.

Now if this were all, it is plain that the cutting of the cavity in the stock would depend upon the action of the workman, and the form given to it would be determined by the manner in which he should guide the tool in its lateral motions, and by the depth to which he should depress it. But this is not all. At a little distance from the cutter, and parallel to it is another descending rod, which is called the guide; and this guide is so connected with the cutting tool, by means of a very complicated and ingenious machinery, that the latter is governed rigidly and exactly in all its movements by the motion of the former. Now there is placed immediately beneath the guide, what is called the pattern, that is a cavity in a block of iron of precisely the form and size which it is intended to give to the cavity in the wooden stock. All that the workman has to do therefore, when the machine is put in motion is to bring the guide down into the pattern and move it about the circumference and through the centre of it. The cutting tool imitating precisely the motions of the guide, enters the wood, and cutting its way in the most perfect manner and with incredible rapidity, forms an exact duplicate of the cavity in the pattern. The theory of this operation is sufficiently curious and striking – but the wonder excited by it is infinitely enhanced by seeing the work done. It is on this principle substantially that all the

machines of the Stocking Shop are constructed; every separate recess, perforation, or groove of the piece requiring of course its own separate mechanism. The stocks are passed from one of these engines to another in rapid succession, and come out at last, each one the perfect fac-simile of its fellow.

DIVISION OF LABOR

We have said that the number of separate parts which go to compose a musket is forty-nine; but this by no means denotes the number of distinct operations required in the manufacture of it – for almost every one of these forty-nine parts is subject to many distinct operations, each of which has its own name, is assigned to its own separate workman, and is paid for distinctly and by itself, according to the price put upon it in the general tariff of wages. The number of operations thus separately named, catalogued and priced, is *three hundred and ninety-six*.

These operations are entirely distinct from one another – each constituting, as it were, in some sense a distinct trade, so that it might be quite possible that no one man in the whole establishment should know how to perform any two of them. It is quite certain, in fact, that no man can perform any considerable number of them. They are of very various grades in respect to character and price – from the welding of the barrel which is in some points of view the highest and most responsible of all, down to the cutting out of pins and screws of the most insignificant character. They are all however regularly rated, and the work that is performed upon them is paid for by the piece.

ASSEMBLING THE MUSKET

When the several parts are all finished, the operation of putting them together so as to make up the musket from them complete, is called "assembling the musket." The workman who performs this function has all the various parts before him at his bench, arranged in boxes and compartments, in regular order, and taking one component from this place, and another from that, he proceeds to put the complicated piece of mechanism together. His bench is fitted up expressly for the work which he is to perform upon it, with a vice to hold without marring, and rests to support without confining, and every other convenience and facility which experience and ingenuity can suggest. With these helps, and by means of the dexterity which continued practice gives him, he performs the work in a manner so adroit and rapid, as to excite the wonder of every beholder. In fact it is always a pleasure to see any thing done that is done with grace and dexterity, and this is a pleasure which the visitor to the Armory has an opportunity to enjoy at almost every turn.

The component parts of the musket are all made according to one precise pattern, and thus when taken up at random they are sure to come properly together. There is no individual fitting required in each particular case. Any barrel will fit into any stock, and a screw designed for a particular plate or band, will enter the proper hole in any plate or band of a hundred thousand. There

are many advantages which result from this precise conformity to an established pattern in the components of the musket. In the first place the work of manufacturing it is more easily performed in this way. It is always the tendency of machinery to produce similarity in its results, and thus although where only two things are to be made it is very difficult to get them alike, the case is very different where there is a call for two hundred thousand. In this last case it is far easier and cheaper to have them alike than to have them different; for in manufacturing on such a scale a machinery is employed, which results in fashioning every one of its products on the precise model to which the inventor adapted the construction of it. Then, besides, a great convenience and economy results from this identity of form in the component parts of the musket, when the arms are employed in service. Spare screws, locks, bands, springs, &c., can be furnished in quantities, and sent to any remote part of the country wherever they are required; so that when any part of a soldier's gun becomes injured or broken, its place can be immediately supplied by a new piece, which is sure to fit as perfectly into the vacancy as the original occupant. Even after a battle there is nothing to prevent the surviving soldiers from making up themselves, out of a hundred broken and dismantled muskets, fifty good ones as complete and sound as ever, by rejecting what is damaged, and assembling the uninjured parts anew.

To facilitate such operations as these the mechanism by which the various parts of the musket are attached to each other and

secured in their places, is studiously contrived with a view to facilitating in the highest degree the taking of them apart, and putting them together. Each soldier to whom a musket is served is provided with a little tool, which, though very simple in its construction, consists of several parts and is adapted to the performance of several functions. With the assistance of this tool the soldier sitting on the bank by the roadside, at a pause in the middle of his march, if the regulations of the service would allow him to do so, might separate his gun into its forty-seven components, and spread the parts out upon the grass around him. Then if any part was doubtful he could examine it. If any was broken he could replace it – and after having finished his inspection he could reconstruct the mechanism, and march on as before.

It results from this system that to make any change, however slight, in the pattern of the musket or in the form of any of the parts of it, is attended with great difficulty and expense. The fashion and form of every one of the component portions of the arm, are very exactly and rigidly determined by the machinery that is employed in making it, and any alteration, however apparently insignificant, would require a change in this machinery. It becomes necessary, therefore, that the precise pattern both of the whole musket and of all of its parts, once fixed, should remain permanently the same.

The most costly of the parts which lie before the workman in assembling the musket is the barrel. The value of it complete

is three dollars. From the barrel we go down by a gradually descending scale to the piece of smallest value, which is a little wire called the ramrod spring wire – the value of which is only one mill; that is the workman is paid only one dollar a thousand for the manufacture of it. The time expended in assembling a musket is about ten minutes, and the price paid for the work is four cents.

THE ARSENAL

The New Arsenal, which has already been alluded to in the description of the general view of the Arsenal grounds, is a very stately edifice. It is two hundred feet long, seventy feet wide, and fifty feet high. It is divided into three stories, each of which is calculated to contain one hundred thousand muskets, making three hundred thousand in all. The muskets when stored in this arsenal are arranged in racks set up for the purpose along the immense halls, where they stand upright in rows, with the glittering bayonets shooting up, as it were, above. The visitors who go into the arsenal walk up and down the aisles which separate the ranges of racks, admiring the symmetry and splendor of the display.

The Arsenal has another charm for visitors besides the beauty of the spectacle which the interior presents – and that is the magnificent panorama of the surrounding country, which is seen from the summit of the tower. This tower, which occupies the centre of the building, is about ninety feet high – and as it is about thirty feet square, the deck at the top furnishes space for a large party of visitors to stand and survey the surrounding country. Nothing can be imagined more enchanting than the view presented from this position in the month of June. The Armory grounds upon one side, and the streets of the town upon the other lie, as it were, at the feet of the spectator, while in the distance

the broad and luxuriant valley of the Connecticut is spread out to view, with its villages, its fields, its groves, its bridges, its winding railways, and its serpentine and beautiful streams.

THE ADMINISTRATION OF THE ARMORY

The manufacture of muskets being a work that pertains in some sense to the operations of the army, should be, for that reason, under *military* rule. On the other hand, inasmuch as it is wholly a work of mechanical and peaceful industry, a *civil* administration would seem to be most appropriate for it. There is, in fact, a standing dispute on this subject both in relation to the Armory at Springfield and to that at Harper's Ferry, among those interested in the establishments, and it is a dispute which, perhaps, will never be finally settled. The Springfield Armory is at this time under military rule – the present commanding officer, Colonel Ripley, having been put in charge of it about ten years ago, previous to which time it was under civil superintendence. At the time of Col. Ripley's appointment the works, as is universally acknowledged, were in a very imperfect condition, compared with the present state. On entering upon the duties of his office, the new incumbent engaged in the work of improvement with great resolution and energy, and after contending for several years with the usual obstacles and difficulties which men have to encounter in efforts at progress and reform, he succeeded in bringing the establishment up to a state of very high perfection; and now the order, the system, the neatness, the almost military

exactness and decorum which pervade every department of the works are the theme of universal admiration. The grounds are kept in the most perfect condition – the shops are bright and cheerful, the walls and floors are every where neat and clean, the machinery and tools are perfect, and are all symmetrically and admirably arranged, while the workmen are well dressed, and are characterized by an air of manliness, intelligence, and thrift, that suggests to the mind of the visitor the idea of amateur mechanics, working with beautiful tools, for pleasure.

And yet the men at first complained, sometimes, of the stringency of rules and regulations required to produce these results. These rules are still in force, though now they are very generally acquiesced in. No newspapers of any kind can be taken into the shops, no tobacco or intoxicating drinks can be used there, no unnecessary conversation is allowed, and the regulations in respect to hours of attendance, and to responsibility for damaged work are very definite and strict. But even if the workmen should be disposed in any case to complain of the stringency of these requirements, they can not but be proud of the result; for they take a very evident pleasure in the gratification which every visitor manifests in witnessing the system, the order, the neatness, and the precision that every where prevail.

Nothing can be more admirably planned, or more completely and precisely executed than the system of accounts kept at the offices, by which not only every pecuniary transaction, but also,

as would seem, almost every mechanical operation or act that takes place throughout the establishment is made a matter of record. Thus every thing is checked and regulated. No piece, large or small, can be lost from among its hundreds of fellows without being missed somewhere in some column of figures – and the whole history of every workman's doings, and of every piece of work done, is to be found recorded. Ask the master-armorer any questions whatever about the workings of the establishment, whether relating to the minutest detail, or to most comprehensive and general results, and he takes down a book and shows you the answer in some column or table.

After all, however, this neatness, precision, and elegance in the appearance and in the daily workings of an establishment like this, though very agreeable to the eye of the observer, constitute a test of only secondary importance in respect to the actual character of the administration that governs it. To judge properly on this point, the thing to be looked at is the actual and substantial results that are obtained. The manufacture of muskets is the great function of the Armory, and not the exhibition of beautiful workshops, and curious processes in mechanics for the entertainment of visitors. When we inquire, however, into the present arrangement of this establishment, in this point of view, the conclusion seems to be still more decidedly in its favor than in the other. The cost of manufacturing each musket immediately before the commencement of the term of the present commander was about seventeen dollars and a half. During the past year it

has been eight dollars and three quarters, and yet the men are paid better wages now per day, or, rather, they are paid at such rates for their work, that they can earn more now per day, than then. The saving has thus not been at all made from the pay of the workmen, but wholly from the introduction of new and improved modes of manufacture, better machines, a superior degree of order, system, and economy in every department, and other similar causes. How far the improvements which have thus been made are due to the intrinsic qualities of military government, and how far to the personal efficiency of the officer in this case intrusted with the administration of it, it might be somewhat difficult to decide.

In fact, when judging of the advancement made during a period of ten years, in an establishment of this kind, at the present age of the world, some considerable portion of the improvement that is manifested is due, doubtless, to the operation of those causes which are producing a general progress in all the arts and functions of social life. The tendency of every thing is onward. Every where, and for all purposes, machinery is improving, materials are more and more easily procured, new facilities are discovered and new inventions are made, the results of which inure to the common benefit of all mankind. It is only so far as an establishment like the Armory advances at a more rapid rate than that of the general progress of the age, that any special credit is due to those who administer its affairs. It always seems, however, to strangers visiting the Armory and observing its condition, that

these general causes will account for but a small portion of the results which have been attained in the management of it, during the past ten years.

CONCLUSION

As was stated at the commencement of the article, it is only a small part of the hundreds of thousands of muskets manufactured, that are destined ever to be used. Some portion of the whole number are served out to the army, and are employed in Indian warfare, others are destined to arm garrisons in various fortresses and military posts, where they are never called to any other service than to figure in peaceful drillings and parades. Far the greater portion, however, are sent away to various parts of the country, to be stored in the national arsenals, where they lie, and are to lie, as we hope, forever, undisturbed, in the midst of scenes of rural beauty and continued peace. The flowers bloom and the birds sing unmolested around the silent and solitary depositories, where these terrible instruments of carnage and destruction unconsciously and forever repose.

NAPOLEON BONAPARTE. [1]

BY JOHN S. C. ABBOTT

PEACE WITH ENGLAND

It was the first great object of Napoleon, immediately upon his accession to power, to reconcile France with Europe, and to make peace with all the world. France was weary of war. She needed repose, to recover from the turmoil of revolution. Napoleon, conscious of the necessities of France, was consecrating Herculean energies for the promotion of peace. The Directory, by oppressive acts, had excited the indignation of the United States. Napoleon, by a course of conciliation, immediately removed that hostility, and, but a short time before the treaty of Luneville, ratified a treaty of amity between France and the United States. The signature of this treaty was celebrated with great rejoicings at the beautiful country seat which Joseph, who in consequence of his marriage was richer than his brother, had purchased at Morfontaine. Napoleon, accompanied by a

brilliant party, met the American commissioners there. The most elegant decorations within the mansion and in the gardens, represented France and America joined in friendly union. Napoleon presented the following toast: "The memory of the French and the Americans who died on the field of battle for the independence of the New World." Lebrun, the Second Consul, proposed, "The union of America with the Northern powers, to enforce respect for the liberty of the seas." Cambaceres gave for the third toast, "The successor of Washington." Thus did Napoleon endeavor to secure the friendship of the United States.

About this time Pope Pius VI. died, and the Cardinals met to choose his successor. The respect with which Napoleon had treated the Pope, and his kindness to the emigrant priests, during the first Italian campaign, presented so strong a contrast with the violence enjoined by the Directory, as to produce a profound impression upon the minds of the Pope and the Cardinals.

The Bishop of Imola was universally esteemed for his extensive learning, his gentle virtues, and his firm probity. Upon the occasion of the union of his diocese with the Cisalpine Republic, he preached a very celebrated sermon, in which he spoke of the conduct of the French in terms highly gratifying to the young conqueror. The power of Napoleon was now in the ascendant. It was deemed important to conciliate his favor. "It is from France," said Cardinal Gonsalvi, "that persecutions have come upon us for the last ten years. It is from France, perhaps, that we shall derive aid and consolation for the future. A very

extraordinary young man, one very difficult as yet to judge, holds dominion there at the present day. His influence will soon be paramount in Italy. Remember that he protected the priests in 1797. He has recently conferred funeral honors upon Pius VI." These were words of deep foresight. They were appreciated by the sagacious Cardinals. To conciliate the favor of Napoleon, the Bishop of Imola was elected to the pontifical chair as Pope Pius VII.

Naples had been most perfidious in its hostility to France. The Queen of Naples was a proud daughter of Maria Theresa, and sister of the Emperor of Austria and of the unfortunate Marie Antoinette. She surely must not be too severely condemned for execrating a revolution which had consigned her sister to the dungeon and to the guillotine. Naples, deprived of Austrian aid, was powerless. She trembled under apprehension of the vengeance of Napoleon. The King of Austria could no longer render his sister any assistance. She adopted the decisive and romantic expedient of proceeding in person, notwithstanding the rigor of the approaching winter, to St. Petersburg, to implore the intercession of the Emperor Paul. The eccentric monarch, flattered by the supplication of the beautiful queen, immediately espoused her cause, and dispatched a messenger to Napoleon, soliciting him, as a personal favor, to deal gently with Naples. The occurrence was, of course, a triumph and a gratification to Napoleon. Most promptly and courteously he responded to the appeal. It was indeed his constant study at this time, to arrest

the further progress of the revolution, to establish the interests of France upon a basis of order and of law, and to conciliate the surrounding monarchies, by proving to them that he had no disposition to revolutionize their realms. A word from him would have driven the King and Queen of Naples into exile, and would have converted their kingdom into a republic. But Napoleon refused to utter that word, and sustained the King of Naples upon his throne.

The Duke of Parma, brother of the King of Spain, had, through the intercession of Napoleon, obtained the exchange of his duchy, for the beautiful province of Tuscany. The First Consul had also erected Tuscany into the kingdom of Etruria, containing about one million of inhabitants. The old duke, a bigoted prince, inimical to all reform, had married his son (a feeble, frivolous young man) to the daughter of his brother, the King of Spain. The kingdom of Etruria was intended for this youthful pair. Napoleon, as yet but thirty years of age, thus found himself forming kingdoms and creating kings. The young couple were in haste to ascend the throne. They could not, however, do this until the Duke of Parma should die or abdicate. The unaccommodating old duke refused to do either. Napoleon, desirous of producing a moral impression in Paris, was anxious to crown them. He therefore allowed the duke to retain Parma until his death, that his son might be placed upon the throne of Etruria. He wished to exhibit the spectacle, in the regicide metropolis of France, of a king created and

enthroned by France. Thus he hoped to diminish the antipathy to kings, and to prepare the way for that restoration of the monarchical power which he contemplated. He would also thus conciliate monarchical Europe, by proving that he had no design of overthrowing every kingly throne. It was indeed adroitly done. He required, therefore, the youthful princes to come to Paris, to accept the crown from his hands, as in ancient Rome vassal monarchs received the sceptre from the Cæsars. The young candidates for monarchy left Madrid, and repaired to the Tuileries, to be placed upon the throne by the First Consul. This measure had two aspects, each exceedingly striking. It frowned upon the hostility of the people to royalty, and it silenced the clamor against France, as seeking to spread democracy over the ruins of all thrones. It also proudly said, in tones which must have been excessively annoying to the haughty legitimists of Europe, "You kings must be childlike and humble. You see that I can create such beings as you are." Napoleon, conscious that his glory elevated him far above the ancient dynasty, whose station he occupied, was happy to receive the young princes with pomp and splendor. The versatile Parisians, ever delighted with novelty, forgot the twelve years of bloody revolutions, which had overturned so many thrones, and recognizing, in this strange spectacle, the fruits of their victories, and the triumph of their cause, shouted most enthusiastically, "Long live the king!" The royalists, on the other hand, chagrined and sullen, answered passionately, "Down with kings!" Strange reverse!

yet how natural! Each party must have been surprised and bewildered at its own novel position. In settling the etiquette of this visit, it was decided that the young princes should call first upon Napoleon, and that he should return their call the next day. The First Consul, at the head of his brilliant military staff, received the young monarch with parental kindness and with the most delicate attentions, yet with the universally recognized superiorities of power and glory. The princes were entertained at the magnificent chateau of Talleyrand at Neuilly, with most brilliant festivals and illuminations. For a month the capital presented a scene of most gorgeous spectacles. Napoleon, too entirely engrossed with the cares of empire to devote much time to these amusements, assigned the entertainment of his guests to his ministers. Nevertheless he endeavored to give some advice to the young couple about to reign over Etruria. He was much struck with the weakness of the prince, who cherished no sense of responsibility, and was entirely devoted to trivial pleasures. He was exceedingly interested in the mysteries of cotillions, of leap-frog, and of hide-and-go-seek – and was ever thus trifling with the courtiers. Napoleon saw that he was perfectly incapable of governing, and said to one of his ministers, "You perceive that they are princes, descended from an ancient line. How can the reins of government be intrusted to such hands? But it was well to show to France this specimen of the Bourbons. She can judge if these ancient dynasties are equal to the difficulties of an age like ours." As the young king left Paris for his dominions, Napoleon

remarked to a friend, "Rome need not be uneasy. There is no danger of *his* crossing the Rubicon." Napoleon sent one of his generals to Etruria with the royal pair, ostensibly as the minister of France, but in reality as the viceroy of the First Consul. The feeble monarch desired only the rank and splendor of a king, and was glad to be released from the *cares* of empire. Of all the proud acts performed by Napoleon during his extraordinary career, this creation of the Etruscan king, when viewed in all its aspects, was perhaps the proudest.

Madame de Montesson had become the guilty paramour of the Duke of Orleans, grandfather of Louis Phillipe. She was not at all ashamed of this relation, which was sanctioned by the licentiousness of the times. Proud even of this alliance with a prince of the blood, she fancied that it was her privilege, as the only relative of the royal line then in Paris, to pay to the King and Queen of Etruria such honors as they might be gratified in receiving from the remains of the old court society. She therefore made a brilliant party, inviting all the returned emigrants of illustrious birth. She even had the boldness to invite the family of the First Consul, and the distinguished persons of his suite. The invitation was concealed from Napoleon, as his determination to frown upon all immorality was well known. The next morning Napoleon heard of the occurrence, and severely reprimanded those of his suite who had attended the party, dwelling with great warmth upon the impropriety of countenancing vice in high places. Savary, who attended the party, and shared in

the reprimand, says, that Madame de Montesson would have been severely punished had it not been for the intervention of Josephine, who was ever ready to plead for mercy.

Napoleon having made peace with continental Europe, now turned his attention earnestly to England, that he might compel that unrelenting antagonist to lay down her arms. "France," said he, "will not reap all the blessings of a pacification, until she shall have a peace with England. But a sort of delirium has seized on that government, which now holds nothing sacred. Its conduct is unjust, not only toward the French people, but toward all the other powers of the Continent. And when governments are not just their authority is short-lived. All the continental powers must force England to fall back into the track of moderation, of equity, and of reason." Notwithstanding this state of hostilities it is pleasant to witness the interchange of the courtesy of letters. Early in January of 1801, Napoleon sent some very valuable works, magnificently bound, as a present to the Royal Society of London. A complimentary letter accompanied the present, signed – Bonaparte, *President of the National Institute, and First Consul of France*. As a significant intimation of his principles, there was on the letter a finely-executed vignette, representing Liberty sailing on the ocean in an open shell with the following motto:

"liberty of the seas."

England claimed the right of visiting and searching merchant ships, to whatever nation belonging, whatever the cargoes,

wherever the destination. For any resistance of this right, she enforced the penalty of the confiscation of both ship and cargo. She asserted that nothing was necessary to constitute a blockade but to announce the fact, and to station a vessel to cruise before a blockaded port. Thus all the nations of the world were forbidden by England to approach a port of France. The English government strenuously contended that these principles were in accordance with the established regulations of maritime law. The neutral powers, on the other hand, affirmed that these demands were an usurpation on the part of England, founded on power, unsanctioned by the usages of nations, or by the principles of maritime jurisprudence. "Free ships," said they, "make free goods. The flag covers the merchandise. A port is to be considered blockaded only when such a force is stationed at its mouth as renders it dangerous to enter."

Under these circumstances, it was not very difficult for Napoleon to turn the arms of the united world against his most powerful foe. England had allied all the powers of Europe against France. Now Napoleon combined them all in friendly alliance with him, and directed their energies against his unyielding and unintimidated assailant. England was mistress of the seas. Upon that element she was more powerful than all Europe united. It was one great object of the British ministry to prevent any European power from becoming the maritime rival of England. Napoleon, as he cast his eye over his magnificent empire of forty millions of inhabitants, and surveyed his invincible armies,

was excessively annoyed that the fifteen millions of people, crowded into the little island of England, should have undisputed dominion over the whole wide world of waters. The English have ever been respected, above all other nations, for wealth, power, courage, intelligence, and all stern virtues; but they never have been beloved. The English nation is at the present moment the most powerful, the most respected, and the most unpopular upon the surface of the globe. Providence deals in compensations. It is perhaps unreasonable to expect that all the virtues should be centred in one people. "When," exclaimed Napoleon, "will the French exchange their vanity for a little pride?" It may be rejoined, "When will the English lay aside their pride for a little vanity – that perhaps more ignoble, but certainly better-natured foible?" England, abandoned by all her allies, continued the war, apparently because her pride revolted at the idea of being conquered into a peace. And in truth England had not been vanquished at all. Her fleets were every where triumphant. The blows of Napoleon, which fell with such terrible severity upon her allies, could not reach her floating batteries. The genius of Napoleon overshadowed the land. The genius of Pitt swept the seas. The commerce of France was entirely annihilated. The English navy, in the utter destitution of nobler game, even pursued poor French fishermen, and took away their haddock and their cod. The verdict of history will probably pronounce that this was at least a less magnificent rapacity than to despoil regal and ducal galleries of the statues of Phidias and the cartoons of

Raphael.

England declared France to be in a state of blockade, and forbade all the rest of the world from having any commercial intercourse with her. Her invincible fleet swept all seas. Wherever an English frigate encountered any merchant ship, belonging to whatever nation, a shot was fired across her bows as a very emphatic command to stop. If the command was unheeded a broadside followed, and the peaceful merchantman became lawful prize. If the vessel stopped, a boat was launched from the frigate, a young lieutenant ascended the sides of the merchantman, demanded of the captain the papers, and searched the ship. If he found on board any goods which *he judged* to belong to France, he took them away. If he could find any goods which he could consider as munitions of war, and which in his judgment the ship was conveying to France, the merchantman, with all its contents was confiscated. Young lieutenants in the navy are not proverbial for wasting many words in compliments. They were often overbearing and insolent. England contended that these were the established principles of maritime law. All the nations of Europe, now at peace with France, excessively annoyed at this *right of search*, which was rigorously enforced, declared it to be an intolerable usurpation on the part of England. Russia, Prussia, Denmark, Sweden, Holland, France, and Spain united in a great confederacy to resist these demands of the proud monarch of the seas. The genius of Napoleon formed this grand coalition. Paul of Russia, now a most enthusiastic

admirer of the First Consul, entered into it with all his soul. England soon found herself single-handed against the world in arms. With sublime energy the British ministry collected their strength for the conflict. Murmurs, however, and remonstrances loud and deep pervaded all England. The opposition roused itself to new vigor. The government, in the prosecution of this war, had already involved the nation in a debt of millions upon millions. But the pride of the English government was aroused. "What! make peace upon compulsion!" England was conscious of her maritime power, and feared not the hostility of the world. And the world presented a wide field from which to collect remuneration for her losses. She swept the ocean triumphantly. The colonies of the allies dropped into her hand, like fruit from the overladen bough. Immediately upon the formation of this confederacy, England issued an embargo upon every vessel belonging to the allied powers, and also orders were issued for the immediate capture of any merchant vessels, belonging to these powers, wherever they could be found. The ocean instantly swarmed with English privateersmen. Her navy was active every where. There had been no proclamation of war issued. The merchants of Europe were entirely unsuspicious of any such calamity. Their ships were all exposed. By thousands they were swept into the ports of England. More than half of the ships, belonging to the northern powers, then at sea, were captured.

Russia, Denmark, and Sweden, had a large armament in the Baltic. A powerful English fleet was sent for its destruction.

The terrible energies of Nelson, so resplendent at Aboukir, were still more resplendent at Copenhagen. A terrific conflict ensued. The capital of Denmark was filled with weeping and woe, for thousands of her most noble sons, the young and the joyous, were weltering in blood. "I have been," said Nelson, "in above a hundred engagements; but that of Copenhagen was the most terrible of them all."

In the midst of this terrific cannonade, Nelson was rapidly walking the quarter-deck, which was slippery with blood and covered with the dead, who could not be removed as fast as they fell. A heavy shot struck the main-mast, scattering the splinters in every direction. He looked upon the devastation around him, and, sternly smiling, said, "This is warm work, and this day may be the last to any of us in a moment. But mark me, I would not be elsewhere for thousands." This was heroic, but it was not noble. It was the love of war, not the love of humanity. It was the spirit of an Indian chieftain, not the spirit of a Christian Washington. The commander-in-chief of the squadron, seeing the appalling carnage, hung out the signal for discontinuing the action. Nelson was for a moment deeply agitated, and then exclaimed to a companion, "I have but one eye. I have a right to be blind sometimes." Then, putting the glass to his blind eye, he said, "I really don't see the signal. Keep mine for closer battle still flying. That is the way I answer such signals. Nail mine to the mast." The human mind is so constituted that it must admire heroism. That sentiment is implanted in every generous

breast for some good purpose. Welmoes, a gallant young Dane, but seventeen years of age, stationed himself on a small raft, carrying six guns with twenty-four men, directly under the bows of Nelson's ship. The unprotected raft was swept by an incessant storm of bullets from the English marines. Knee deep in the dead this fearless stripling continued to keep up his fire to the close of the conflict. The next day, Nelson met him at a repast at the palace. Admiring the gallantry of his youthful enemy, he embraced him with enthusiasm, exclaiming to the Crown Prince, "He deserves to be made an admiral." "Were I to make all my brave officers admirals," replied the Prince, "I should have no captains or lieutenants in my service."

By this battle the power of the confederacy was broken. At the same time, the Emperor Paul was assassinated in his palace, by his nobles, and Alexander, his son, ascended the throne. When Napoleon heard of the death of Paul, it is said that he gave utterance, for the first time in his life, to that irreverent expression, "Mon Dieu" (*My God*), which is ever upon the lips of every Frenchman. He regarded his death as a great calamity to France and to the world. The eccentricities of the Emperor amounted almost to madness. But his enthusiastic admiration for Napoleon united France and Russia in a close alliance.

The nobles of Russia were much displeased with the democratic equality which Napoleon was sustaining in France. They plotted the destruction of the king, and raised Alexander to the throne, pledged to a different policy. The young monarch

immediately withdrew from the maritime confederacy, and entered into a treaty of peace with England. These events apparently so disastrous to the interests of France, were on the contrary highly conducive to the termination of the war. The English people, weary of the interminable strife, and disgusted with the oceans of blood which had been shed, more and more clamorously demanded peace. And England could now make peace without the mortification of her pride.

Napoleon was extremely vigilant in sending succor to the army in Egypt. He deemed it very essential in order to promote the maritime greatness of France, that Egypt should be retained as a colony. His pride was also enlisted in proving to the world that he had not transported forty-six thousand soldiers to Egypt in vain. Vessels of every description, ships of war, merchantmen, dispatch-boats, sailed almost daily from the various ports of Holland, France, Spain, Italy, and even from the coast of Barbary, laden with provisions, European goods, wines, munitions of war, and each taking a file of French newspapers. Many of these vessels were captured. Others, however, escaped the vigilance of the cruisers, and gave to the colony most gratifying proof of the interest which the First Consul took in its welfare. While Napoleon was thus daily endeavoring to send partial relief to the army in Egypt, he was at the same time preparing a vast expedition to convey thither a powerful reinforcement of troops and materials of war. Napoleon assembled this squadron at Brest, ostensibly destined

for St. Domingo. He selected seven of the fastest sailing ships, placed on board of them five thousand men and an ample supply of all those stores most needed in Egypt. He ordered that each vessel should contain a complete assortment of every individual article, prepared for the colony, so that in the event of one vessel being captured, the colony would not be destitute of the precise article which that vessel might otherwise have contained. He also, in several other places, formed similar expeditions, hoping thus to distract the attention of England, and compel her to divide her forces to guard all exposed points. Taking advantage of this confusion, he was almost certain that some of the vessels would reach Egypt. The plan would have been triumphantly successful, as subsequent events proved, had the naval commanders obeyed the instructions of Napoleon. A curious instance now occurred, of what may be called the despotism of the First Consul. And yet it is not strange that the French people should, under the peculiar circumstances, have respected and loved such despotism. The following order was issued to the Minister of Police: "Citizen Minister – Have the goodness to address a short circular to the editors of the fourteen journals, forbidding the insertion of any article, calculated to afford the enemy the slightest clew to the different movements which are taking place in our squadrons, unless the intelligence be derived from the official journal." Napoleon had previously through the regularly constituted tribunals, suppressed all the journals in Paris, but fourteen. The world has often wondered

why France so readily yielded to the despotism of Napoleon. It was because the French were convinced that dictatorial power was essential to the successful prosecution of the war; and that each act of Napoleon was dictated by the most wise and sincere patriotism. They were willing to sacrifice the liberty of the press, that they might obtain victory over their enemies.

The condition of England was now truly alarming. Nearly all the civilized world was in arms against her. Her harvests had been cut off, and a frightful famine ravaged the land. The starving people were rising in different parts of the kingdom, pillaging the magnificent country seats of the English aristocracy, and sweeping in riotous mobs through the cities. The masses in England and in Ireland, wretchedly perishing of hunger, clamored loudly against Pitt. They alleged that he was the cause of all their calamities – that he had burdened the nation with an enormous debt and with insupportable taxes – that by refusing peace with France, he had drawn all the continental powers into hostility with England, and thus had deprived the people of that food from the Continent which was now indispensable for the support of life. The opposition, seeing the power of Pitt shaken, redoubled their blows. Fox, Tiernay, Grey, Sheridan, and Holland renewed their attacks with all the ardor of anticipated success. "Why," said they, "did you not make peace with France, when the First Consul proposed it before the battle of Marengo? Why did you not consent to peace, when it was again proposed after that battle? Why did you refuse

consent to separate negotiation, when Napoleon was willing to enter into such without demanding the cessation of hostilities by sea?" They contrasted the distress of England with the prosperity of France. "France," said they, "admirably governed, is at peace with Europe. In the eyes of the world, she appears humane, wise, tranquil, evincing the most exemplary moderation after all her victories." With bitter irony they exclaimed, "What have you now to say of this young Bonaparte, of this rash youth who, according to the ministerial language, was only doomed to enjoy a brief existence, like his predecessors, so ephemeral, that it did not entitle him to be treated with?"

Pitt was disconcerted by the number of his enemies, and by the clamors of a famishing people. His proud spirit revolted at the idea of changing his course. He could only reiterate his argument, that if he had not made war against revolutionary France, England would also have been revolutionized. There is an aspect of moral sublimity in the firmness with which this distinguished minister breasted a world in arms. "As to the demand of the neutral powers," said he, "we must envelop ourselves in our flag, and proudly find our grave in the deep, rather than admit the validity of such principles in the maritime code of nations." Though Pitt still retained his numerical majority in the Parliament, the masses of the people were turning with great power against him, and he felt that his position was materially weakened. Under these circumstances, Pitt, idolized by the aristocracy, execrated by the democracy, took occasion to send

in his resignation. The impression seemed to be universal, that the distinguished minister, perceiving that peace must be made with France, temporarily retired, that it might be brought about by others, rather than by himself. He caused himself, however, to be succeeded by Mr. Addington, a man of no distinguished note, but entirely under his influence. The feeble intellect of the King of England, though he was one of the most worthy and conscientious of men, was unequal to these political storms. A renewed attack of insanity incapacitated him for the functions of royalty. Mr. Pitt, who had been prime minister for seventeen years, became by this event virtually the king of England, and Mr. Addington was his minister.

Napoleon now announced to the world his determination to struggle hand to hand with England, until he had compelled that government to cease to make war against France. Conscious of the naval superiority of his foes, he avowed his resolve to cross the channel with a powerful army, march directly upon London, and thus compel the cabinet of St. James's to make peace. It was a desperate enterprise; so desperate that to the present day it is doubted whether Napoleon ever seriously contemplated carrying it into effect. It was, however, the only measure Napoleon could now adopt. The naval superiority of England was so undeniable, that a maritime war was hopeless. Nelson, in command of the fleet of the channel, would not allow even a fishing boat to creep out from a French cove. Napoleon was very desirous of securing in his favor the popular

opinion of England, and the sympathies of the whole European public. He prepared with his own hand many articles for the "Moniteur," which were models of eloquent and urgent polemics, and which elicited admiration from readers in all countries. He wrote in the most respectful and complimentary terms of the new English ministry, representing them as intelligent, upright, and well-intentioned men. He endeavored to assure Europe of the unambitious desires of France, and contrasted her readiness to relinquish the conquests which she had made, with the eager grasp with which the English held their enormous acquisitions in India, and in the islands of the sea. With the utmost delicacy, to avoid offending the pride of Britain, he affirmed that a descent upon England would be his last resource, that he fully appreciated the bravery and the power of the English, and the desperate risks which he should encounter in such an undertaking. But he declared that there was no other alternative left to him, and that if the English ministers were resolved that the war should not be brought to a close, but by the destruction of one of the two nations, there was not a Frenchman who would not make the most desperate efforts to terminate this cruel quarrel to the glory of France. "But why," exclaimed he, in words singularly glowing and beautiful, but of melancholy import, "why place the question on this last resort? Wherefore not put an end to the sufferings of humanity? Wherefore risk in this manner the lot of two great nations? Happy are nations when, having arrived at high prosperity, they have wise governments, which care not

to expose advantages so vast, to the caprices and vicissitudes of a single stroke of fortune." These most impressive papers, from the pen of the First Consul, remarkable for their vigorous logic and impassioned eloquence, produced a deep impression upon all minds. This conciliatory language was accompanied by the most serious demonstrations of force upon the shores of the Channel. One hundred thousand men were upon the coasts of France, in the vicinity of Boulogne, preparing for the threatened invasion. Boats without number were collected to transport the troops across the narrow channel. It was asserted that by taking advantage of a propitious moment immediately after a storm had scattered the English fleet, France could concentrate such a force as to obtain a temporary command of the channel, and the strait could be crossed by the invaders. England was aroused thoroughly, but not alarmed. The militia was disciplined, the whole island converted into a camp. Wagons were constructed for the transportation of troops to any threatened point. It is important that the reader should distinguish this first threat of invasion in 1801, from that far more powerful naval and military organization executed for the same purpose in 1804, and known under the name of the Camp of Boulogne.

Not a little uneasiness was felt in England respecting the temporary success of the great conqueror. Famine raged throughout the island. Business was at a stand. The taxes were enormous. Ireland was on the eve of revolt. The mass of the English people admired the character of Napoleon; and,

notwithstanding all the efforts of the government, regarded him as the foe of aristocracy and the friend of popular rights. Nelson, with an invincible armament, was triumphantly sweeping the Channel, and a French gun-boat could not creep round a headland without encountering the vigilance of the energetic hero. Napoleon, in escaping from Egypt, had caught Nelson napping in a lady's lap. The greatest admirers of the naval hero, could not but smile, half-pleased that, under the guilty circumstances, he had met with the misadventure. He was anxious, by a stroke of romantic heroism, to obliterate this impression from the public mind. The vast flotilla of France, most thoroughly manned and armed under the eye of Napoleon, was anchored at Boulogne, in three divisions, in a line parallel to the shore. Just before the break of day on the 4th of August, the fleet of Nelson, in magnificent array, approached the French flotilla, and for sixteen hours rained down upon it a perfect tornado of balls and shells. The gun-boats were, however, chained to one another, and to the shore. He did not succeed in taking a single boat, and retired mortified at his discomfiture, and threatening to return in a few days to take revenge. The French were exceedingly elated that in a naval conflict they had avoided defeat. As they stood there merely upon self-defense, victory was out of the question.

The reappearance of Nelson was consequently daily expected, and the French, emboldened by success, prepared to give him a warm reception. Twelve days after, on the 16th of August, Nelson again appeared with a vastly increased force. In the

darkness of the night he filled his boats with picked men, to undertake one of the most desperate enterprises on record. In four divisions, with muffled oars, this forlorn hope, in the silence of midnight, approached the French flotilla. The butchery, with swords, hatchets, bayonets, bullets, and hand grenades, was hideous. Both parties fought with perfect fury. No man seemed to have the slightest regard for limb or life. England was fighting for, she knew not what. The French were contending in self-defense. For four long hours of midnight gloom, the slaughter continued. Thousands perished. Just as the day was dawning upon the horrid scene the English retired, repulsed at every point, and confessing to a defeat. The result of these conflicts diminished the confidence of the English in Nelson's ability to destroy the preparations of Napoleon, and increased their apprehension that the French might be enabled by some chance, to carry the war of invasion to their own firesides.

"I was resolved," said Napoleon, afterward, "to renew, at Cherbourg, the wonders of Egypt. I had already raised in the sea my pyramid. I would also have had my Lake Mareotis. My great object was to concentrate all our maritime forces, and in time they would have been immense, in order to be able to deal out a grand stroke at the enemy. I was establishing my ground so as to bring the two nations, as it were, body to body. The ultimate issue could not be doubtful; for we had forty millions of French against fifteen millions of English. I would have terminated the strife by a battle of Actium."

One after another of the obstacles in the way of peace now gradually gave way. Overtures were made to Napoleon. He accepted the advances of England with the greatest eagerness and cordiality. "Peace," said he, "is easily brought about, if England desires it." On the evening of the 21st of October the preliminaries were signed in London. That very night a courier left England to convey the joyful intelligence to France. He arrived at Malmaison, the rural retreat of Napoleon, at four o'clock in the afternoon of the next day. At that moment the three Consuls were holding a government council. The excitement of joy, in opening the dispatches, was intense. The Consuls ceased from their labors, and threw themselves into each other's arms in cordial embraces. Napoleon, laying aside all reserve, gave full utterance to the intense joy which filled his bosom. It was for him a proud accomplishment. In two years, by his genius and his indefatigable exertions he had restored internal order to France, and peace to the world. Still, even in this moment of triumph, his entire, never wavering devotion to the welfare of France, like a ruling passion strong even in death, rose above his exultation. "Now that we have made a treaty of *peace* with England," said Cambaceres, "we must make a treaty of *commerce*, and remove all subjects of dispute between the two countries." Napoleon promptly replied, "Not so fast! The political peace is made. So much the better. Let us enjoy it. As to a commercial peace we will make one, if we can. *But at no price will I sacrifice French industry.* I remember the

misery of 1786." The news had been kept secret in London for twenty-four hours, that the joyful intelligence might be communicated in both capitals at the same time. The popular enthusiasm both in England and France bordered almost upon delirium. It was the repose of the Continent. It was general, universal peace. It was opening the world to the commerce of all nations. War spreads over continents the glooms of the world of woe; while peace illumines them with the radiance of Heaven. Illuminations blazed every where. Men, the most phlegmatic, met and embraced each other with tears. The people of England surrendered themselves to the most extraordinary transports of ardor. They loved the French. They adored the hero, the sage, the great pacificator, who governed France. The streets of London resounded with shouts, "Long live Bonaparte." Every stage-coach which ran from London, bore triumphant banners, upon which were inscribed, *Peace with France*. The populace of London rushed to the house of the French negotiator. He had just entered his carriage to visit Lord Hawkesbury, to exchange ratifications. The tumultuous throng of happy men unharnessed his horses and dragged him in triumph, in the delirium of their joy rending the skies with their shouts. The crowd and the rapturous confusion at last became so great that Lord Vincent, fearing some accident, placed himself at the head of the amiable mob, as it triumphantly escorted and conveyed the carriage from minister to minister.

A curious circumstance occurred at the festival in London,

highly characteristic of the honest bluntness, resolution, and good nature of English seamen. The house of M. Otto, the French minister, was most brilliantly illuminated. Attracted by its surpassing splendor a vast crowd of sailors had gathered around. The word *concord* blazed forth most brilliantly in letters of light. The sailors, not very familiar with the spelling-book, exclaimed, "*Conquered!* not so, by a great deal. That will not do." Excitement and dissatisfaction rapidly spread. Violence was threatened. M. Otto came forward himself most blandly, but his attempts at explanation were utterly fruitless. The offensive word was removed, and *amity* substituted. The sailors, fully satisfied with the *amende honorable*, gave three cheers and went on their way rejoicing.

In France the exultation was, if possible, still greater than in England. The admiration of Napoleon, and the confidence in his wisdom and his patriotism were perfectly unbounded. No power was withheld from the First Consul which he was willing to assume. The nation placed itself at his feet. All over the Continent Napoleon received the honorable title of "*The Hero Pacificator of Europe*." And yet there was a strong under-current to this joy. Napoleon was the favorite, not of the nobles, but of the people. Even his acts of despotic authority were most cordially sustained by the people of France, for they believed that such acts were essential for the promotion of their welfare. "The ancient privileged classes and the foreign cabinets," said Napoleon, "hate me worse than they did Robespierre." The

hosannas with which the name of Bonaparte was resounding through the cities and the villages of England fell gloomily upon the ears of Mr. Pitt and his friends. The freedom of the seas was opening to the energetic genius of Napoleon, an unobstructed field for the maritime aggrandizement of France. The British minister knew that the sleepless energies of Napoleon would, as with a magician's wand, call fleets into existence to explore all seas. Sorrowfully he contemplated a peace to which the popular voice had compelled him to yield, and which in his judgment boded no good to the naval superiority of England.

It was agreed that the plenipotentiaries, to settle the treaty definitively, should meet at Amiens, an intermediate point midway between London and Paris. The English appointed as their minister Lord Cornwallis. The Americans, remembering this distinguished general at Brandywine, Camden, and at the surrender of Yorktown, have been in the habit of regarding him as an enemy. But he was a gallant soldier, and one of the most humane, high-minded, and estimable of men. Frankly he avowed his conviction that the time had arrived for terminating the miseries of the world by peace. Napoleon has paid a noble tribute to the integrity, urbanity, sagacity, and unblemished honor of Lord Cornwallis. Joseph Bonaparte was appointed by the First Consul embassador on the part of France. The suavity of his manners, the gentleness of his disposition, his enlightened and liberal political views, and the Christian morality which, in those times of general corruption, embellished his conduct, peculiarly

adapted him to fulfill the duties of a peace-maker. Among the terms of the treaty it was agreed that France should abandon her colony in Egypt, as endangering the English possessions in India. In point of fact, the French soldiers had already, by capitulation, agreed to leave Egypt, but tidings of the surrender had not then reached England or France. The most important question in these deliberations was the possession of the Island of Malta. The power in possession of that impregnable fortress had command of the Mediterranean. Napoleon insisted upon it, as a point important above all others, that England should not retain Malta. He was willing to relinquish all claim to it himself, and to place it in the hands of a neutral power; but he declared his unalterable determination that he could by no possibility consent that it should remain in the hands of England. At last England yielded, and agreed to evacuate Malta, and that it should be surrendered to the Knights of St. John.

This pacification, so renowned in history both for its establishment and for its sudden and disastrous rupture, has ever been known by the name of the Peace of Amiens. Napoleon determined to celebrate the joyful event by a magnificent festival. The 10th of November, 1801, was the appointed day. It was the anniversary of Napoleon's attainment of the consular power. Friendly relations having been thus restored between the two countries, after so many years of hostility and carnage, thousands of the English flocked across the channel and thronged the pavements of Paris. All were impatient to see France, thus

suddenly emerging from such gloom into such unparalleled brilliancy; and especially to see the man, who at that moment was the admiration of England and of the world. The joy which pervaded all classes invested this festival with sublimity. With a delicacy of courtesy characteristic of the First Consul, no carriages but those of Lord Cornwallis were allowed in the streets on that day. The crowd of Parisians, with most cordial and tumultuous acclamations, opened before the representative of the armies of England. The illustrious Fox was one of the visitors on this occasion. He was received by Napoleon with the utmost consideration, and with the most delicate attentions. In passing through the gallery of sculpture, his lady pointed his attention to his own statue filling a niche by the side of Washington and Brutus. "Fame," said Napoleon, "had informed me of the talents of Fox. I soon found that he possessed a noble character, a good heart, liberal, generous, and enlightened views. I considered him an ornament to mankind, and was much attached to him." Every one who came into direct personal contact with the First Consul at this time, was charmed with his character.

Nine deputies from Switzerland, the most able men the republic could furnish, were appointed to meet Napoleon, respecting the political arrangements of the Swiss cantons. Punctual to the hour the First Consul entered a neat spacious room, where there was a long table covered with green baize. Dr. Jones of Bristol, the intimate friend of several of these deputies, and who was with them in Paris at the time, thus describes

the interview. "The First Consul entered, followed by two of his ministers, and after the necessary salutation, sat down at the head of the table, his ministers on each side of him. The deputies then took their seats. He spread out before them a large map as necessary to the subject of their deliberations. He then requested that they would state freely any objection which might occur to them in the plan which he should propose. They availed themselves of the liberty, and suggested several alterations which they deemed advantageous to France and Switzerland. But from the prompt, clear, and unanswerable reasons which Napoleon gave in reply to all their objections, he completely convinced them of the wisdom of his plans. After an animated discussion of *ten hours*, they candidly admitted that he was better acquainted with the local circumstances of the Swiss cantons, and with what would secure their welfare than they were themselves. During the whole discussion his ministers did not speak one word. The deputies afterward declared that it was their decided opinion that Napoleon was the most extraordinary man whom they had met in modern times, or of whom they had read in ancient history." Said M. Constant and M. Sismondi, who both knew Napoleon well, "The quickness of his conception, the depth of his remarks, the facility and propriety of his eloquence, and above all the candor of his replies and his patient silence, were more remarkable and attractive than we ever met with in any other individual."

"What your interests require," said Napoleon, at this time, "is: 1. Equality of rights among the whole eighteen cantons. 2. A

sincere and voluntary renunciation of all exclusive privileges on the part of patrician families. 3. A federative organization, where every canton may find itself arranged according to its language, its religion, its manners, and its interests. The central government remains to be provided for, but it is of much less consequence than the central organization. Situated on the summit of the mountains which separate France, Italy, and Germany, you participate in the disposition of all these countries. You have never maintained regular armies, nor had established, accredited agents at the courts of the different governments. Strict neutrality, a prosperous commerce, and family administration, can alone secure your interests, or be suited to your wishes. Every organization which could be established among you, hostile to the interests of France, would injure you in the most essential particulars." This was commending to them a federative organization similar to that of the United States, and *cautioning them against the evil of a centralization of power*. No impartial man can deny that the most profound wisdom marked the principles which Napoleon suggested to terminate the divisions with which the cantons of Switzerland had long been agitated. "These lenient conditions," says Alison, "gave universal satisfaction in Switzerland." The following extract from the noble speech which Napoleon pronounced on the formation of the constitution of the confederacy, will be read by many with surprise, by all with interest.

"The re-establishment of the ancient order of things in the

democratic cantons is the best course which can be adopted, both for you and me. They are the states whose peculiar form of government render them so interesting in the eyes of all Europe. But for this pure democracy you would exhibit nothing which is not to be found elsewhere. *Beware of extinguishing so remarkable a distinction.* I know well that this democratic system of administration has many inconveniences. But it is established. It has existed for centuries. It springs from the circumstances, situation, and primitive habits of the people, from the genius of the place, and can not with safety be abandoned. You must never take away from a democratic society the practical exercise of its privileges. To give such exercise a direction consistent with the tranquillity of the state is the part of true political wisdom. In ancient Rome the votes were counted by classes, and they threw into the last class the whole body of indigent citizens, while the first contained only a few hundred of the most opulent. But the populace were content, and, amused with the solicitation of their votes, did not perceive the immense difference in their relative value." The moral influence which France thus obtained in Switzerland was regarded with extreme jealousy by all the rival powers. Says Alison, who, though imbued most strongly with monarchical and aristocratic predilections, is the most appreciative and impartial of the historians of Napoleon, "His conduct and language on this occasion, were distinguished by his usual penetration and ability, and a most unusual degree of lenity and forbearance. And if any thing could have reconciled

the Swiss to the loss of their independence, it must have been the wisdom and equity on which his mediation was founded."

The English who visited Paris, were astonished at the indications of prosperity which the metropolis exhibited. They found France in a very different condition from the hideous picture which had been described by the London journals. But there were two parties in England. Pitt and his friends submitted with extreme reluctance to a peace which they could not avoid. Says Alison, "But while these were the natural feelings of the inconsiderate populace, who are ever governed by present impressions, and who were for the most part destitute of the information requisite to form a rational opinion on the subject, there were many men, gifted with greater sagacity and foresight, who deeply lamented the conditions by which peace had been purchased, and from the very first prophesied that it could be of no long endurance. They observed that the war had been abruptly terminated, without any one object being gained for which it was undertaken; that it was entered into in order to curb the ambition, and to stop the democratic propagandism of France." These "many men gifted with greater sagacity," with William Pitt at their head, now employed themselves with sleepless vigilance and with fatal success to bring to a rupture a peace which they deemed so untoward. Sir Walter Scott discloses the feelings with which this party were actuated, in the observations, "It seems more than probable that the extreme rejoicing of the rabble of London, at signing the preliminaries, their dragging

about the carriage of Lauriston, and shouting 'Bonaparte forever,' had misled the ruler of France into an opinion that peace was indispensably necessary to England. He may easily enough have mistaken the cries of a London mob for the voice of the British people."

In the midst of all these cares, Napoleon was making strenuous efforts to restore religion to France. It required great moral courage to prosecute such a movement. Nearly all the generals in his armies were rank infidels, regarding every form of religion with utter contempt. The religious element, by *nature*, predominated in the bosom of Napoleon. He was constitutionally serious, thoughtful, pensive. A profound melancholy ever overshadowed his reflective spirit. His inquisitive mind pondered the mysteries of the past and the uncertainties of the future. Educated in a wild country, where the peasantry were imbued with religious feelings, and having been trained by a pious mother, whose venerable character he never ceased to adore, the sight of the hallowed rites of religion revived in his sensitive and exalted imagination the deepest impressions of his childhood. He had carefully studied, on his return from Egypt, the New Testament, and appreciated and profoundly admired its beautiful morality. He often conversed with Monge, Lagrange, Laplace, sages whom he honored and loved, and he frequently embarrassed them in their incredulity, by the logical clearness of his arguments. The witticisms of Voltaire, and the corruptions of unbridled sin, had rendered the purity of

the gospel unpalatable to France. Talleyrand, annoyed by the remembrance of his own apostasy, bitterly opposed what he called "the religious peace." Nearly all the supporters and friends of the First Consul condemned every effort to bring back that which they denominated the reign of superstition. Napoleon honestly believed that the interests of France demanded that God should be recognized and Christianity respected by the French nation.

"Hear me," said Napoleon one day earnestly to Monge. "I do not maintain these opinions through the positiveness of a devotee, but from reason. My religion is very simple. I look at this universe, so vast, so complex, so magnificent, and I say to myself that it can not be the result of chance, but the work, however intended, of an unknown, omnipotent being, as superior to man as the universe is superior to the finest machines of human invention. Search the philosophers, and you will not find a more decisive argument, and you can not weaken it. But this truth is too succinct for man. He wishes to know, respecting himself and respecting his future destiny, a crowd of secrets which the universe does not disclose. Allow religion to inform him of that which he feels the need of knowing, and respect her disclosures."

One day when this matter was under earnest discussion in the council of state, Napoleon said, "Last evening I was walking alone, in the woods, amid the solitude of nature. The tones of a distant church bell fell upon my ear. Involuntarily I felt deep emotion. So powerful is the influence of early habits

and associations. I said to myself, If I feel thus, what must be the influence of such impressions upon the popular mind? Let your philosophers answer that, if they can. It is absolutely indispensable to have a religion for the people. It will be said that I am a Papist. I am not. I am convinced that a part of France would become Protestant, were I to favor that disposition. I am also certain that the much greater portion would continue Catholic; and that they would oppose, with the greatest zeal, the division among their fellow-citizens. We should then have the Huguenot wars over again, and interminable conflicts. But by reviving a religion which has always prevailed in the country, and by giving perfect liberty of conscience to the minority, all will be satisfied."

On another occasion he remarked, "What renders me most hostile to the establishment of the Catholic worship, are the numerous festivals formerly observed. A saint's-day is a day of idleness, and I do not wish for that. People must labor in order to live. I shall consent to four holidays during the year, but to no more. If the gentlemen from Rome are not satisfied with that, they may take their departure." The loss of time appeared to him such a calamity, that he almost invariably appointed any indispensable celebration upon some day previously devoted to festivity.

The new pontiff was attached to Napoleon by the secret chain of mutual sympathy. They had met, as we have before remarked, during the wars of Italy. Pius VII., then the bishop

of Imola, was surprised and delighted in finding in the young republican general, whose fame was filling Europe, a man of refinement, of exalted genius, of reflection, of serious character, of unblemished purity of life, and of delicate sensibilities, restraining the irreligious propensities of his soldiers, and respecting the temples of religion. With classic purity and eloquence he spoke the Italian language. The dignity and decorum of his manners, and his love of order, were strangely contrasted with the recklessness of the ferocious soldiers with whom he was surrounded. The impression thus produced upon the heart of the pontiff was never effaced. Justice and generosity are always politic. But he must indeed be influenced by an ignoble spirit who hence infers, that every act of magnanimity is dictated by policy. A legate was sent by the Pope to Paris. "Let the holy father," said Napoleon, "put the utmost confidence in me. Let him cast himself into my arms, and I will be for the church another Charlemagne."

Napoleon had collected for himself a religious library of well chosen books, relating to the organization and the history of the church, and to the relations of church and state. He had ordered the Latin writings of Bossuet to be translated for him. These works he had devoured in those short intervals which he could glean from the cares of government. His genius enabled him, at a glance, to master the argument of an author, to detect any existing sophistry. His memory, almost miraculously retentive, and the philosophical cast of his mind, gave him at all times the

perfect command of these treasures of knowledge. He astonished the world by the accuracy, extent, and variety of his information upon all points of religion. It was his custom, when deeply interested in any subject, to discuss it with all persons from whom he could obtain information. With clear, decisive, and cogent arguments he advocated his own views, and refuted the erroneous systems successively proposed to him. It was urged upon Napoleon, that if he must have a church, he should establish a French church, independent of that of Rome. The poetic element was too strong in the character of Napoleon for such a thought. "What!" he exclaimed, "shall I, a warrior, wearing sword and spurs, and doing battle, attempt to become the head of a church, and to regulate church discipline and doctrine. I wish to be the pacificator of France and of the world, and shall I become the originator of a new schism, a little more absurd and not less dangerous than the preceding ones. I must have a Pope, and a Pope who will approximate men's minds to each other, instead of creating divisions; who will reunite them, and give them to the government sprung from the revolution, as a price for the protection that he shall have obtained from it. For this purpose I must have the true Pope, the Catholic, Apostolic, and Roman Pope, whose seat is at the Vatican. With the French armies and some deference, I shall always be sufficiently his master. When I shall raise up the altars again, when I shall protect the priests, when I shall feed them, and treat them as ministers of religion deserve to be treated in every country, he will do what I ask of

him, through the interest he will have in the general tranquillity. He will calm men's minds, reunite them under his hand, and place them under mine. Short of this there is only a continuation and an aggravation of the desolating schism which is preying on us, and for me an immense and indelible ridicule."

The Pope's legate most strenuously urged some of the most arrogant and exclusive assumptions of the papal church. "The French people must be allured back to religion," said Napoleon, "not shocked. To declare the Catholic religion *the religion of the state* is impossible. It is contrary to the ideas prevalent in France, and will never be admitted. In place of this declaration we can only substitute the avowal of the fact, *that the Catholic religion is the religion of the majority of Frenchmen*. But there must be perfect freedom of opinion. The amalgamation of wise and honest men of all parties is the principle of my government. I must apply that principle to the church as well as to the state. It is the only way of putting an end to the troubles of France, and I shall persist in it undeviatingly."

Napoleon was overjoyed at the prospect, not only of a general peace with Europe, but of religious peace in France. In all the rural districts, the inhabitants longed for their churches and their pastors, and for the rites of religion. In the time of the Directory, a famous wooden image of the Virgin had been taken from the church at Loretto, and was deposited in one of the museums of Paris, as a curiosity. The sincere Catholics were deeply wounded and irritated by this act, which

to them appeared so sacrilegious. Great joy was caused both in France and Italy, when Napoleon sent a courier to the Pope, restoring this statue, which was regarded with very peculiar veneration. The same embassador carried the terms of agreement for peace with the church. This religious treaty with Rome was called "The Concordat." The Pope, in secular power, was helpless. Napoleon could, at any moment, pour a resistless swarm of troops into his territories. As the French embassador left the Tuileries, he asked the First Consul for his instructions. "Treat the Pope," said Napoleon, magnanimously, "as if he had two hundred thousand soldiers." The difficulties in the way of an amicable arrangement were innumerable. The army of France was thoroughly infidel. Most of the leading generals and statesmen who surrounded Napoleon, contemplated Christianity in every aspect with hatred and scorn. On the other hand, the Catholic Church, uninstructed by misfortune, was not disposed to abate in the least its arrogant demands, and was clamorous for concessions which even Napoleon had not power to confer. It required all the wisdom, forbearance, and tact of the First Consul to accomplish this reconciliation. Joseph Bonaparte, the accomplished gentleman, the sincere, urbane, sagacious, upright man, was Napoleon's *corps de reserve* in all diplomatic acts. The preliminaries being finally adjusted, the Pope's legation met at the house of Joseph Bonaparte, and on the 15th of July, 1801, this great act was signed. Napoleon announced the event to the Council of State. He addressed them in a speech an hour and a

half in length, and all were struck with the precision, the vigor, and the loftiness of his language. By universal consent his speech was pronounced to be eloquent in the highest degree. But those philosophers, who regarded it as the great glory of the revolution, that all superstition, by which they meant all religion, was swept away, in sullen silence yielded to a power which they could not resist. The people, the millions of France, were with Napoleon.

The following liberal and noble sentiments were uttered in the proclamation by which Napoleon announced the Concordat to the French people: "An insane policy has sought, during the revolution, to smother religious dissensions under the ruins of the altar, under the ashes of religion itself. At its voice all those pious solemnities ceased, in which the citizens called each other by the endearing name of brothers, and acknowledged their common equality in the sight of Heaven. The dying, left alone in his agonies, no longer heard that consoling voice, which calls the Christian to a better world. God Himself seemed exiled from the face of nature. Ministers of the religion of peace, let a complete oblivion vail over your dissensions, your misfortunes, your faults. Let the religion which unites you, bind you by indissoluble cords to the interests of your country. Let the young learn from your precepts, that the God of Peace is also the God of Arms, and that He throws his shield over those who combat for the liberties of France. Citizens of the Protestant Faith, the law has equally extended its solicitude to your interests. Let the morality, so pure, so holy, so brotherly, which you profess, unite you all in

love to your country, and in respect for its laws; and, above all, never permit disputes on doctrinal points to weaken that universal charity which religion at once inculcates and commands."

To foreign nations the spectacle of France, thus voluntarily returning to the Christian faith, was gratifying in the highest degree. It seemed to them the pledge of peace and the harbinger of tranquillity. The Emperor of Russia, and the King of Prussia publicly expressed their joy at the auspicious event. The Emperor of Austria styled it "a service truly rendered to all Europe." The serious and devout, in all lands, considered the voluntary return of the French people to religion, from the impossibility of living without its precepts, as one of the most signal triumphs of the Christian faith.

On the 11th of April, 1802, the event was celebrated by a magnificent religious ceremony in the cathedral of Nôtre Dame. No expense was spared to invest the festivity with the utmost splendor. Though many of the generals and the high authorities of the State were extremely reluctant to participate in the solemnities of the occasion, the power and the popularity of the First Consul were so great, that they dared not make any resistance. The cathedral was crowded with splendor. The versatile populace, ever delighted with change and with shows, were overjoyed. General Rapp, however, positively refused to attend the ceremony. With the bluntness of a soldier, conscious that his well-known devotion to the First Consul would procure for him impunity, he said, "I shall not attend. But if you do not

make these priests your aids or your cooks, you may do with them as you please."

As Napoleon was making preparations to go to the cathedral, Cambaceres entered his apartment.

"Well," said the First Consul, rubbing his hands in the glow of his gratification, "we go to church this morning. What say they to that in Paris?"

"Many persons," replied Cambaceres, "propose to attend the first representation in order to hiss the piece, should they not find it amusing."

"If any one," Napoleon firmly replied, "takes it into his head to hiss, I shall put him out of the door by the grenadiers of the consular guard."

"But what if the grenadiers themselves," Cambaceres rejoined, "should take to hissing, like the rest?"

"As to that I have no fear," said Napoleon. "My old mustaches will go here to Notre Dame, just as at Cairo, they would have gone to the mosque. They will remark how I do, and seeing their general grave and decent, they will be so, too, passing the watchword to each other, *Decency*."

"What did you think of the ceremony?" inquired Napoleon of General Delmas, who stood near him, when it was concluded. "It was a fine piece of mummery," he replied; "nothing was wanting but the million of men who have perished to destroy that which you have now re-established." Some of the priests, encouraged by this triumphant restoration of Christianity, began

to assume not a little arrogance. A celebrated opera dancer died, not in the faith. The priest of St. Roche refused to receive the body into the church, or to celebrate over it the rites of interment. The next day Napoleon caused the following article to be inserted in the *Moniteur*. "The curate of St. Roche, in a moment of hallucination, has refused the rites of burial to Mademoiselle Cameroi. One of his colleagues, a man of sense, received the procession into the church of St. Thomas, where the burial service was performed with the usual solemnities. The archbishop of Paris has suspended the curate of St. Roche for three months, to give him time to recollect that Jesus Christ commanded us to pray even for our enemies. Being thus recalled by meditation to a proper sense of his duties, he may learn that all these superstitious observances, the offspring of an age of credulity or of crazed imaginations, tend only to the discredit of true religion, and have been proscribed by the recent concordat of the French Church." The most strenuous exertions were made by the clergy to induce Napoleon publicly to partake of the sacrament of the Lord's Supper. It was thought that his high example would be very influential upon others. Napoleon nobly replied, "I have not sufficient faith in the ordinance to be benefited by its reception; and I have too much faith in it to allow me to be guilty of sacrilege. We are well as we are. Do not ask me to go farther. You will never obtain what you wish. I will not become a hypocrite. Be content with what you have already gained."

It is difficult to describe the undisguised delight with which the peasants all over France again heard the ringing of the church-bells upon the Sabbath morning, and witnessed the opening of the church-doors, the assembling of the congregations with smiles and congratulations, and the repose of the Sabbath. Mr. Fox, in conversation with Napoleon, after the peace of Amiens, ventured to blame him for not having authorized the marriage of priests in France. "I then had," said Napoleon, in his nervous eloquence, "need to pacify. It is with water and not with oil that you must extinguish theological volcanoes. I should have had less difficulty in establishing the Protestant religion in my empire."

The magistrates of Paris, grateful for the inestimable blessings which Napoleon had conferred upon France, requested him to accept the project of a triumphal monument to be erected in his honor at a cost of one hundred thousand dollars. Napoleon gave the following reply. "I view with grateful acknowledgments those sentiments which actuate the magistrates of the city of Paris. The idea of dedicating monumental trophies to those men who have rendered themselves useful to the community is a praiseworthy action in all nations. I accept the offer of the monument which you desire to dedicate to me. Let the spot be designated. But leave the labor of constructing it to future generations, should they think fit thus to sanction the estimate which you place upon my services."

There was an indescribable fascination about the character of

Napoleon, which no other man ever possessed, and which all felt who entered his presence. Some military officers of high rank, on one occasion, in these days of his early power, agreed to go and remonstrate with him upon some subject which had given them offense. One of the party thus describes the interview.

"I do not know whence it arises, but there is a charm about that man, which is indescribable and irresistible. I am no admirer of him. I dislike the power to which he has risen. Yet I can not help confessing that there is a something in him, which seems to speak that he is born to command. We went into his apartment determined to declare our minds to him very freely; to expostulate with him warmly, and not to depart till our subjects of complaint were removed. But in his manner of receiving us, there was a certain something, a degree of fascination, which disarmed us in a moment; nor could we utter one word of what we had intended to say. He talked to us for a long time, with an eloquence peculiarly his own, explaining, with the utmost clearness and precision, the necessity for steadily pursuing the line of conduct he had adopted. Without contradicting us in direct terms, he controverted our opinions so ably, that we had not a word to say in reply. We left him, having done nothing else but listen to him, instead of expostulating with him; and fully convinced, at least for the moment, that he was in the right, and that we were in the wrong."

The merchants of Rouen experienced a similar fascination, when they called to remonstrate against some commercial

regulations which Napoleon had introduced. They were so entirely disarmed by his frankness, his sincerity, and were so deeply impressed by the extent and the depth of his views, that they retired, saying, "The First Consul understands our interests far better than we do ourselves." "The man," says Lady Morgan, "who, at the head of a vast empire, could plan great and lasting works, conquer nations, and yet talk astronomy with La Place, tragedy with Talma, music with Cherubini, painting with Gerrard, *vertu* with Denon, and literature and science with any one who would listen to him, was certainly out of the roll of common men."

Napoleon now exerted all his energies for the elevation of France. He sought out and encouraged talent wherever it could be found. No merit escaped his princely munificence. Authors, artists, men of science were loaded with honors and emoluments. He devoted most earnest attention to the education of youth. The navy, commerce, agriculture, manufactures, and all mechanic arts, secured his assiduous care. He labored to the utmost, and with a moral courage above all praise, to discountenance whatever was loose in morals, or enervating or unmanly in amusements or taste. The theatre was the most popular source of entertainment in France. He frowned upon all frivolous and immodest performances, and encouraged those only which were moral, grave, and dignified. In the grandeur of tragedy alone he took pleasure. In his private deportment he exhibited the example of a moral, simple, and toilsome life. Among the forty

millions of France, there was not to be found a more temperate and laborious man. When nights of labor succeeded days of toil, his only stimulus was lemonade. He loved his own family and friends, and was loved by them with a fervor which soared into the regions of devotion. Never before did mortal man secure such love. Thousands were ready at any moment to lay down their lives through their affection for him. And that mysterious charm was so strong that it has survived his death. Thousands now live who would brave death in any form from love for Napoleon.

PECULIAR HABITS OF DISTINGUISHED AUTHORS

Among the curious facts which we find in perusing the biographies of great men, are the circumstances connected with the composition of the works which have made them immortal.

For instance, Bossuet composed his grand sermons on his knees; Bulwer wrote his first novels in full dress, scented; Milton, before commencing his great work, invoked the influence of the Holy Spirit, and prayed that his lips might be touched with a live coal from off the altar; Chrysostom meditated and studied while contemplating a painting of Saint Paul.

Bacon knelt down before composing his great work, and prayed for light from Heaven. Pope never could compose well without first declaiming for some time at the top of his voice, and thus rousing his nervous system to its fullest activity.

Bentham composed after playing a prelude on the organ, or while taking his "ante-jentacular" and "post-prandial" walks in his garden – the same, by the way, that Milton occupied. Saint Bernard composed his Meditations amidst the woods; he delighted in nothing so much as the solitude of the dense forest, finding there, he said, something more profound and suggestive than any thing he could find in books. The storm would sometimes fall upon him there, without for a moment

interrupting his meditations. Camoens composed his verses with the roar of battle in his ears; for, the Portuguese poet was a soldier, and a brave one, though a poet. He composed others of his most beautiful verses, at the time when his Indian slave was begging a subsistence for him in the streets. Tasso wrote his finest pieces in the lucid intervals of madness.

Rousseau wrote his works early in the morning; Le Sage at mid-day; Byron at midnight. Hardouin rose at four in the morning, and wrote till late at night. Aristotle was a tremendous worker; he took little sleep, and was constantly retrenching it. He had a contrivance by which he awoke early, and to awake was with him to commence work. Demosthenes passed three months in a cavern by the sea-side, in laboring to overcome the defects of his voice. There he read, studied, and declaimed.

Rabelais composed his Life of *Gargantua* at Bellay, in the company of Roman cardinals, and under the eyes of the Bishop of Paris. La Fontaine wrote his fables chiefly under the shade of a tree, and sometimes by the side of Racine and Boileau. Pascal wrote most of his Thoughts on little scraps of paper, at his by-moments. Fenelon wrote his *Telemachus* in the palace of Versailles, at the court of the Grand Monarque, when discharging the duties of tutor to the Dauphin. That a book so thoroughly democratic should have issued from such a source, and been written by a priest, may seem surprising. De Quesnay first promulgated his notion of universal freedom of person and trade, and of throwing all taxes on the land – the germ, perhaps, of the

French Revolution – in the *boudoir* of Madame de Pompadour!

Luther, when studying, always had his dog lying at his feet – a dog he had brought from Wartburg, and of which he was very fond. An ivory crucifix stood on the table before him, and the walls of his study were stuck round with caricatures of the Pope. He worked at his desk for days together without going out; but when fatigued, and the ideas began to stagnate in his brain, he would take his flute or his guitar with him into the porch, and there execute some musical fantasy (for he was a skillful musician), when the ideas would flow upon him again as fresh as flowers after summer's rain. Music was his invariable solace at such times. Indeed Luther did not hesitate to say, that after theology, music was the first of arts. "Music," said he, "is the art of the prophets; it is the only other art, which, like theology, can calm the agitation of the soul, and put the devil to flight." Next to music, if not before it, Luther loved children and flowers. That great gnarled man had a heart as tender as a woman's.

Calvin studied in his bed. Every morning at five or six o'clock, he had books, manuscripts, and papers, carried to him there, and he worked on for hours together. If he had occasion to go out, on his return he undressed and went to bed again to continue his studies. In his later years he dictated his writings to secretaries. He rarely corrected any thing. The sentences issued complete from his mouth. If he felt his facility of composition leaving him, he forthwith quitted his bed, gave up writing and composing, and went about his out-door duties for days, weeks, and months

together. But so soon as he felt the inspiration fall upon him again, he went back to his bed, and his secretary set to work forthwith.

Cujas, another learned man, used to study when laid all his length upon the carpet, his face toward the floor, and there he reveled amidst piles of books which accumulated about him. The learned Amyot never studied without the harpsichord beside him; and he only quitted the pen to play it. Bentham, also, was extremely fond of the piano-forte, and had one in nearly every room in his house.

Richelieu amused himself in the intervals of his labor, with a squadron of cats, of whom he was very fond. He used to go to bed at eleven at night, and after sleeping three hours, rise and write, dictate or work, till from six to eight o'clock in the morning, when his daily levee was held. This worthy student displayed an extravagance equaling that of Wolsey. His annual expenditure was some four millions of francs, or about £170,000 sterling!

How different the fastidious temperance of Milton! He drank water and lived on the humblest fare. In his youth he studied during the greatest part of the night; but in his more advanced years he went early to bed – by nine o'clock – rising to his studies at four in summer and five in winter. He studied till mid-day; then he took an hour's exercise, and after dinner he sang and played the organ, or listened to others' music. He studied again till six, and from that hour till eight he engaged in conversation with friends who came to see him. Then he supped, smoked a

pipe of tobacco, drank a glass of water, and went to bed. Glorious visions came to him in the night, for it was then, while lying on his couch, that he composed in thought the greater part of his sublime poem. Sometimes when the fit of composition came strong upon him, he would summon his daughter to his side, to commit to paper that which he had composed.

Milton was of opinion that the verses composed by him between the autumnal and spring equinoxes were always the best, and he was never satisfied with the verses he had written at any other season. Alfieri, on the contrary, said that the equinoctial winds produced a state of almost "complete stupidity" in him. Like the nightingales he could only sing in summer. It was his favorite season.

Pierre Corneille, in his loftiest flights of imagination, was often brought to a stand-still for want of words and rhyme. Thoughts were seething in his brain, which he vainly tried to reduce to order, and he would often run to his brother Thomas "for a word." Thomas rarely failed him. Sometimes, in his fits of inspiration, he would bandage his eyes, throw himself on a sofa, and dictate to his wife, who almost worshiped his genius. Thus he would pass whole days, dictating to her his great tragedies; his wife scarcely venturing to speak, almost afraid to breathe. Afterward, when a tragedy was finished, he would call in his sister Martha, and submit it to her judgment; as Moliere used to consult his old housekeeper about the comedies he had newly written.

Racine composed his verses while walking about, reciting them in a loud voice. One day, when thus working at his play of *Mithridates*, in the Tuileries Gardens, a crowd of workmen gathered around him, attracted by his gestures; they took him to be a madman about to throw himself into the basin. On his return home from such walks, he would write down scene by scene, at first in prose, and when he had thus written it out, he would exclaim, "My tragedy is done," considering the dressing of the acts up in verse as a very small affair.

Magliabecchi, the learned librarian to the Duke of Tuscany, on the contrary, never stirred abroad, but lived amidst books, and almost lived upon books. They were his bed, board, and washing. He passed eight-and-forty years in their midst, only twice in the course of his life venturing beyond the walls of Florence; once to go two leagues off, and the other time three and a half leagues, by order of the Grand Duke. He was an extremely frugal man, living upon eggs, bread, and water, in great moderation.

The life of Liebnitz was one of reading, writing, and meditation. That was the secret of his prodigious knowledge. After an attack of gout, he confined himself to a diet of bread and milk. Often he slept in a chair; and rarely went to bed till after midnight. Sometimes he was months without quitting his seat, where he slept by night and wrote by day. He had an ulcer in his right leg which prevented his walking about, even had he wished to do so.

The chamber in which Montesquieu wrote his *Spirit of the*

Laws, is still shown at his old ancestral mansion; hung about with its old tapestry and curtains; and the old easy chair in which the philosopher sat is still sacredly preserved there. The chimney-jamb bears the mark of his foot, where he used to rest upon it, his legs crossed, when composing his books. His *Persian Letters* were composed merely for pastime, and were never intended for publication. The principles of Laws occupied his life. In the study of these he spent twenty years, losing health and eye-sight in the pursuit. As in the case of Milton, his daughter read for him, and acted as his secretary. In his Portrait of himself, he said – "I awake in the morning rejoiced at the sight of day. I see the sun with a kind of ecstasy, and for the rest of the day I am content. I pass the night without waking, and in the evening when I go to bed, a kind of numbness prevents me indulging in reflections. With me, study has been the sovereign remedy against disgust of life, having never had any vexation which an hour's reading has not dissipated. But I have the disease of making books, and of being ashamed when I have made them."

Rousseau had the greatest difficulty in composing his works, being extremely defective in the gift of memory. He could never learn six verses by heart. In his *Confessions* he says – "I studied and meditated in bed, forming sentences with inconceivable difficulty; then, when I thought I had got them into shape, I would rise to put them on paper. But lo! I often entirely forgot them during the process of dressing!" He would then walk abroad to refresh himself by the aspect of nature, and under its influence

his most successful writings were composed. He was always leaving books which he carried about with him at the foot of trees, or by the margin of fountains. He sometimes wrote his books over from beginning to end, four or five times, before giving them to the press. Some of his sentences cost him four or five nights' study. He thought with difficulty, and wrote with still greater. It is astonishing that, with such a kind of intellect, he should have been able to do so much.

The summer study of the famous Buffon, at Montbar, is still shown, just as he left it. It is a little room in a pavilion, reached by mounting a ladder, through a green door with two folds. The place looks simplicity itself. The apartment is vaulted like some old chapel, and the walls are painted green. The floor is paved with tiles. A writing-table of plain wood stands in the centre, and before it is an easy chair. That is all! The place was the summer study of Buffon. In winter, he had a warmer room within his house, where he wrote his *Natural History*. There, on his desk, his pen still lies, and by the side of it, on his easy chair, his red dressing-gown and cap of gray silk. On the wall near to where he sat, hangs an engraved portrait of Newton. There, and in his garden cabinet, he spent many years of his life, studying and writing books. He studied his work entitled *Epoques de la Nature* for fifty years, and wrote it over *eighteen times* before publishing it! What would our galloping authors say to that?

Buffon used to work on pages of five distinct columns, like a ledger. In the first column he wrote out the first draught;

in the second he corrected, added, pruned, and improved; thus proceeding until he had reached the fifth column, in which he finally wrote out the result of his labor. But this was not all. He would sometimes re-write a sentence twenty times, and was once fourteen hours in finding the proper word for the turning of a period! Buffon knew nearly all his works by heart.

On the contrary, Cuvier never re-copied what he had once written. He composed with great rapidity, correctness, and precision. His mind was always in complete order, and his memory was exact and extensive.

Some writers have been prodigiously laborious in the composition of their works. Cæsar had, of course, an immense multiplicity of business, as a general, to get through; but he had always a secretary by his side, even when on horseback, to whom he dictated; and often he occupied two or three secretaries at once. His famous *Commentaries* are said to have been composed mostly on horseback.

Seneca was very laborious. "I have not a single idle day," said he, describing his life, "and I give a part of every night to study. I do not give myself up to sleep, but succumb to it. I have separated myself from society, and renounced all the distractions of life." With many of these old heathens, study was their religion.

Pliny the Elder read two thousand volumes in the composition of his Natural History. How to find time for this? He managed it by devoting his days to business and his nights to study. He had books read to him while he was at meals; and he read no

book without making extracts. His nephew, Pliny the Younger, has given a highly interesting account of the intimate and daily life of his uncle.

Origen employed seven writers while composing his *Commentaries*, who committed to paper what he dictated to them by turns. He was so indefatigable in writing that they gave him the name of *Brass Bowels*! Like Philip de Comines, Sully used to dictate to four secretaries at a time, without difficulty.

Bossuet left *fifty volumes* of writings behind him, the result of unintermitting labor. The pen rarely quitted his fingers. Writing became habitual to him, and he even chose it as a relaxation. A night-lamp was constantly lit beside him, and he would rise at all hours to resume his meditations. He rose at about four o'clock in the morning during summer and winter, wrapped himself in his loose dress of bear's skin, and set to work. He worked on for hours, until he felt fatigued, and then went to bed again, falling asleep at once. This life he led for more than twenty years. As he grew older, and became disabled for hard work, he began translating the Psalms into verse, to pass time. In the intervals of fatigue and pain, he read and corrected his former works.

Some writers composed with great rapidity, others slowly and with difficulty. Byron said of himself, that though he felt driven to write, and he was in a state of torture until he had fairly delivered himself of what he had to say, yet that writing never gave him any pleasure, but was felt to be a severe labor. Scott, on the contrary, possessed the most extraordinary facility; and

dashed off a great novel of three volumes in about the same number of weeks.

"I have written *Catiline* in eight days," said Voltaire; "and I immediately commenced the *Henriade*." Voltaire was a most impatient writer, and usually had the first half of a work set up in type before the second half was written. He always had several works in the course of composition at the same time. His manner of preparing a work was peculiar. He had his first sketch of a tragedy set up in type, and then rewrote it from the proofs. Balzac adopted the same plan. The printed form enabled them to introduce effects, and correct errors more easily.

Pascal wrote most of his thoughts on little scraps of paper, at his by-moments of leisure. He produced them with immense rapidity. He wrote in a kind of contracted language – like short hand – impossible to read, except by those who had studied it. It resembled the impatient and fiery scratches of Napoleon; yet, though half-formed, the characters have the firmness and precision of the graver. Some one observed to Faguere (Pascal's editor), "This work (deciphering it) must be very fatiguing to the eyes." "No," said he, "it is not the eyes that are fatigued, so much as the brain."

Many authors have been distinguished for the fastidiousness of their composition – never resting satisfied, but correcting and re-correcting to the last moment. Cicero spent his old age in correcting his orations; Massillon in polishing his sermons; Fenelon corrected his *Telemachus* seven times over.

Of thirty verses which Virgil wrote in the morning, there were only ten left at night. Milton often cut down forty verses to twenty. Buffon would condense six pages into as many paragraphs. Montaigne, instead of cutting down, amplified and added to his first sketch. Boileau had great difficulty in making his verses. He said – "If I write four words, I erase three of them;" and at another time – "I sometimes hunt three hours for a rhyme!"

Some authors were never satisfied with their work. Virgil ordered his *Æneid* to be burnt. Voltaire cast his poem of *The League* into the fire. Racine and Scott could not bear to read their productions again. Michael Angelo was always dissatisfied; he found faults in his greatest and most admired works.

Many of the most admired writings were never intended by their authors for publication. Fenelon, when he wrote *Telemachus*, had no intention of publishing it. Voltaire's *Correspondence* was never intended for publication, and yet it is perused with avidity; whereas his *Henriade*, so often corrected by him, is scarcely read. Madame de Sevigní, in writing to her daughter those fascinating letters descriptive of the life of the French Court, never had any idea of their publication, or that they would be cited as models of composition and style. What work of Johnson's is best known? Is it not that by Boswell, which contains the great philosopher's conversation? – that which he never intended should come to light, and for which we have to thank Bozzy.

There is a great difference in the sensitiveness of authors to criticism. Sir Walter Scott passed thirteen years without reading what the critics or reviewers said of his writings; while Byron was sensitive to an excess about what was said of him. It was the reviewers who stung him into his first work of genius —*English Bards and Scotch Reviewers*. Racine was very sensitive to criticism; and poor Keats was "snuffed out by an article." Moliere was thrown into a great rage when his plays were badly acted. One day, after *Tartuffe* had been played, an actor found him stamping about as if mad, and beating his head, crying – "Ah! dog! Ah! butcher!" On being asked what was the matter, he replied – "Don't be surprised at my emotion! I have just been seeing an actor falsely and execrably declaiming my piece; and I can not see my children maltreated in this horrid way, without suffering the tortures of the damned!" The first time Voltaire's *Artemise* was played, it was *hissed*. Voltaire, indignant, sprang to his feet in his box, and addressed the audience! At another time, at Lausanne, where an actress seemed fully to apprehend his meaning, he rushed upon the stage and embraced her knees!

A great deal might be said about the first failures of authors and orators. Demosthenes stammered, and was almost inaudible, when he first tried to speak before Philip. He seemed like a man moribund. Other orators have broken down, like Demosthenes, in their first effort. Curran tried to speak, for the first time, at a meeting of the Irish Historical Society; but the words died on his lips, and he sat down amid titters – an individual

present characterizing him as *orator Mum*. Boileau broke down as an advocate, and so did Cowper, the poet. Montesquieu and Bentham were also failures in the same profession, but mainly through disgust with it. Addison, when a member of the House of Commons, once rose to speak, but he could not overcome his diffidence, and ever after remained silent.

OSTRICHES.
HOW THEY ARE HUNTED

The family of birds, of which the ostrich forms the leading type, is remarkable for the wide dispersion of its various members; the ostrich itself spreads over nearly the whole of the burning deserts of Africa – the Cassowary represents it amid the luxuriant vegetation of the Indian Archipelago. The Dinornis, chief of birds, formerly towered among the ferns of New Zealand, where the small Apteryx now holds its place; and the huge Æpyornis strode along the forests of Madagascar. The Emu is confined to the great Australian continent, and the Rhea to the southern extremity of the western hemisphere; while nearer home we find the class represented by the Bustard, which, until within a few years, still lingered upon the least frequented downs and plains of England.

With the Arabs of the desert, the chase of the ostrich is the most attractive and eagerly sought of the many aristocratic diversions in which they indulge. The first point attended to, is a special preparation of their horses. Seven or eight days before the intended hunt, they are entirely deprived of straw and grass, and fed on barley only. They are only allowed to drink once a day, and that at sunset – the time when the water begins to freshen: at that time also they are washed. They take long daily exercises,

and are occasionally galloped, at which time care is taken that the harness is right, and suited to the chase of the ostrich. "After seven or eight days," says the Arab, "the stomach of the horse disappears, while the chest, the breast, and the croup remain in flesh; the animal is then fit to endure fatigue." They call this training *techaha*. The harness used for the purpose in question is lighter than ordinary, especially the stirrups and saddle, and the martingale is removed. The bridle, too, undergoes many metamorphoses; the mountings and the ear-flaps are taken away, as too heavy. The bit is made of a camel rope, without a throat-band, and the frontlet is also of cord, and the reins, though strong, are very light. The period most favorable for ostrich-hunting is that of the great heat; the higher the temperature the less is the ostrich able to defend himself. The Arabs describe the precise time as that, when a man stands upright, his shadow has the length only of the sole of his foot.

Each horseman is accompanied by a servant called *zemmal*, mounted on a camel, carrying four goat-skins filled with water, barley for the horse, wheat-flour for the rider, some dates, a kettle to cook the food, and every thing which can possibly be required for the repair of the harness. The horseman contents himself with a linen vest and trowsers, and covers his neck and ears with a light material called *havuli*, tied with a strip of camel's hide; his feet are protected with sandals, and his legs with light gaiters called *trabag*. He is armed with neither gun nor pistol, his only weapon being a wild olive or tamarind stick, five or six feet

long, with a heavy knob at one end.

Before starting, the hunters ascertain where a large number of ostriches are to be found. These birds are generally met with in places where there is much grass, and where rain has recently fallen. The Arabs say, that where the ostrich sees the light shine, and barley getting ready, wherever it may be, thither she runs, regardless of distance; and ten days' march is nothing to her; and it has passed into a proverb in the desert, of a man skillful in the care of flocks, and in finding pasturage, that he is like the ostrich, where he sees the light there he comes.

The hunters start in the morning. After one or two days' journey, when they have arrived near the spot pointed out, and they begin to perceive traces of their game, they halt and camp. The next day, two intelligent slaves, almost entirely stripped, are sent to reconnoitre; they each carry a goat-skin at their side, and a little bread; they walk until they meet with the ostriches, which are generally found in elevated places. As soon as the game is in view, one lies down to watch, the other returns to convey the information. The ostriches are found in troops, comprising sometimes as many as sixty: but at the pairing time they are more scattered, three or four couple only remaining together.

The horsemen, guided by the scout, travel gently toward the birds; the nearer they approach the spot the greater is their caution, and when they reach the last ridge which conceals them from the view of their game, they dismount, and two creep forward to ascertain if they are still there. Should such be the

case, a moderate quantity of water is given to the horses, the baggage is left, and each man mounts, carrying at his side a *chebouta*, or goat-skin. The servants and camels follow the track of the horsemen, carrying with them only a little corn and water.

The exact position of the ostriches being known, the plans are arranged; the horsemen divide and form a circle round the game at such a distance as not to be seen. The servants wait where the horsemen have separated, and as soon as they see them at their posts, they walk right before them; the ostriches fly, but are met by the hunters, who do nothing at first but drive them back into the circle; thus their strength is exhausted by being made to continually run round in the ring. At the first signs of fatigue in the birds, the horsemen dash in – presently the flock separates; the exhausted birds are seen to open their wings, which is a sign of great exhaustion; the horsemen, certain of their prey, now repress their horses; each hunter selects his ostrich, runs it down, and finishes it by a blow on the head with the stick above mentioned. The moment the bird falls the man jumps off his horse, and cuts her throat, taking care to hold the neck at such a distance from the body, as not to soil the plumage of the wings. The male bird, while dying, utters loud moans, but the female dies in silence.

When the ostrich is on the point of being overtaken by the hunter, she is so fatigued, that if he does not wish to kill her, she can easily be driven with the stick to the neighborhood of the camels. Immediately after the birds have been bled to death, they

are carefully skinned, so that the feathers may not be injured, and the skin is then stretched upon a tree, or on a horse, and salt rubbed well into it. A fire is lit, and the fat of the birds is boiled for a long time in kettles; when very liquid, it is poured into a sort of bottle made of the skin of the thigh and leg down to the foot, strongly fastened at the bottom; the fat of one bird is usually sufficient to fill two of these legs; it is said that in any other vessel the fat would spoil. When, however, the bird is breeding, she is extremely lean, and is then hunted only for the sake of her feathers. After these arrangements are completed, the flesh is eaten by the hunters, who season it well with pepper and flour.

While these proceedings are in progress, the horses are carefully tended, watered, and fed with corn, and the party remain quiet during forty-eight hours, to give their animals rest; after that they either return to their encampment, or embark in new enterprises.

To the Arab the chase of the ostrich has a double attraction – pleasure and profit; the price obtained for the skins well compensates for the expenses. Not only do the rich enjoy the pursuit, but the poor, who know how to set about it, are permitted to participate in it also. The usual plan is for a poor Arab to arrange with one who is opulent for the loan of his camel, horse, harness, and two-thirds of all the necessary provisions. The borrower furnishes himself the remaining third, and the produce of the chase is divided in the same proportions.

The ostrich, like many other of the feathered tribe, has a great

deal of self-conceit. On fine sunny days a tame bird may be seen strutting backward and forward with great majesty, fanning itself with its quivering, expanded wings, and at every turn seeming to admire its grace, and the elegance of its shadow. Dr. Shaw says that, though these birds appear tame and tractable to persons well-known to them, they are often very fierce and violent toward strangers, whom they would not only endeavor to push down by running furiously against them, but they would peck at them with their beaks, and strike with their feet; and so violent is the blow that can be given, that the doctor saw a person whose abdomen had been ripped completely open by a stroke from the claw of an ostrich.

To have the stomach of an ostrich has become proverbial, and with good reason; for this bird stands enviably forward in respect to its wonderful powers of digestion, which are scarcely inferior to its voracity. Its natural food consists entirely of vegetable substances, especially grain; and the ostrich is a most destructive enemy to the crops of the African farmers. But its sense of taste is so obtuse, that scraps of leather, old nails, bits of tin, buttons, keys, coins, and pebbles, are devoured with equal relish; in fact, nothing comes amiss. But in this it doubtless follows an instinct: for these hard bodies assist, like the gravel in the crops of our domestic poultry, in grinding down and preparing for digestion its ordinary food.

There was found by Cuvier in the stomach of an ostrich that died at Paris, nearly a pound weight of stones, bits of iron and

copper, and pieces of money worn down by constant attrition against each other, as well as by the action of the stomach itself. In the stomach of one of these birds which belonged to the menagerie of George the Fourth, there were contained some pieces of wood of considerable size, several large nails, and a hen's egg entire and uninjured, perhaps taken as a delicacy from its appetite becoming capricious. In the stomach of another, beside several large cabbage-stalks, there were masses of bricks of the size of a man's fist. Sparrman relates that he saw ostriches at the Cape so tame that they went loose to and from the farm, but they were so voracious as to swallow chickens whole, and trample hens to death, that they might tear them in pieces afterward and devour them; and one great barrel of a bird was obliged to be killed on account of an awkward habit he had acquired of trampling sheep to death. But perhaps the most striking proof of the prowess of an ostrich in the eating way, is that afforded by Dr. Shaw, who saw one swallow bullet after bullet as fast as they were pitched, scorching hot, from the mould.

A DULL TOWN

Putting up for the night in one of the chiefest towns of Staffordshire, I find it to be by no means a lively town. In fact, it is as dull and dead a town as any one could desire not to see. It seems as if its whole population might be imprisoned in its Railway Station. The Refreshment-room at that station is a vortex of dissipation compared with the extinct town-inn, the Dodo, in the dull High-street.

Why High-street? Why not rather Low-street, Flat-street, Low-spirited-street, Used-up-street? Where are the people who belong to the High-street? Can they all be dispersed over the face of the country, seeking the unfortunate Strolling Manager who decamped from the mouldy little theatre last week, in the beginning of his season (as his play-bills testify), repentantly resolved to bring him back, and feed him, and be entertained? Or, can they all be gathered to their fathers in the two old churchyards near to the High-street – retirement into which churchyards appears to be a mere ceremony, there is so very little life outside their confines, and such small discernible difference between being buried alive in the town, and buried dead in the town-tombs? Over the way, opposite to the staring blank bow windows of the Dodo, are a little ironmonger's shop, a little tailor's shop (with a picture of the fashions in the small window and a bandy-legged baby on the pavement staring at it) – a

watchmaker's shop, where all the clocks and watches must be stopped, I am sure, for they could never have the courage to go, with the town in general, and the Dodo in particular, looking at them. Shade of Miss Linwood, erst of Leicester-square, London, thou art welcome here, and thy retreat is fitly chosen! I myself was one of the last visitors to that awful storehouse of thy life's work, where an anchorite old man and woman took my shilling with a solemn wonder, and conducting me to a gloomy sepulchre of needlework dropping to pieces with dust and age, and shrouded in twilight at high noon, left me there, chilled, frightened, and alone. And now, in ghostly letters on all the dead walls of this dead town, I read thy honored name, and find, that thy Last Supper, worked in Berlin Wool, invites inspection as a powerful excitement!

Where are the people who are bidden with so much cry to this feast of little wool? Where are they? Who are they? They are not the bandy-legged baby studying the fashions in the tailor's window. They are not the two earthy plow-men lounging outside the saddler's shop, in the stiff square where the Town Hall stands, like a brick-and-mortar private on parade. They are not the landlady of the Dodo in the empty bar, whose eye had trouble in it and no welcome, when I asked for dinner. They are not the turnkeys of the Town Jail, looking out of the gateway in their uniforms, as if they had locked up all the balance (as my American friends would say) of the inhabitants, and could now rest a little. They are not the two dusty millers in the white mill

down by the river, where the great water-wheel goes heavily round and round, like the monotonous days and nights in this forgotten place. Then who are they? for there is no one else. No; this deponent maketh oath and saith that there is no one else, save and except the waiter at the Dodo, now laying the cloth. I have paced the streets, and stared at the houses, and am come back to the blank bow-window of the Dodo; and the town-clock strikes seven, and the reluctant echoes seem to cry, "Don't wake us!" and the bandy-legged baby has gone home to bed.

If the Dodo were only a gregarious bird – if it had only some confused idea of making a comfortable nest – I could hope to get through the hours between this and bed-time, without being consumed by devouring melancholy. But the Dodo's habits are all wrong. It provides me with a trackless desert of sitting-room, with a chair for every day in the year, a table for every month, and a waste of sideboard where a lonely China vase pines in a corner for its mate long departed, and will never make a match with the candlestick in the opposite corner if it live till doomsday. The Dodo has nothing in the larder. Even now, I behold the Boots returning with my sole in a piece of paper; and with that portion of my dinner, the Boots, perceiving me at the blank bow-window, slaps his leg as he comes across the road, pretending it is something else. The Dodo excludes the outer air. When I mount up to my bed-room, a smell of closeness and flue gets lazily up my nose like sleepy snuff. The loose little bits of carpet writhe under my tread, and take wormy shapes. I don't know the

ridiculous man in the looking-glass, beyond having met him once or twice in a dish-cover – and I can never shave *him* to-morrow morning! The Dodo is narrow-minded as to towels; expects me to wash on a freemason's apron without the trimming; when I ask for soap, gives me a stony-hearted something white, with no more lather in it than the Elgin marbles. The Dodo has seen better days, and possesses interminable stables at the back – silent, grass-grown, broken-windowed, horseless.

This mournful bird can fry a sole, however, which is much. Can cook a steak, too, which is more. I wonder where it gets its Sherry! If I were to send my pint of wine to some famous chemist to be analyzed, what would it turn out to be made of? It tastes of pepper, sugar, bitter almonds, vinegar, warm knives, any flat drink, and a little brandy. Would it unman a Spanish exile by reminding him of his native land at all? I think not. If there really be any townspeople out of the church-yards, and if a caravan of them ever do dine, with a bottle of wine per man, in this desert of the Dodo, it must make good for the doctor next day!

Where was the waiter born? How did he come here? Has he any hope of getting away from here? Does he ever receive a letter, or take a ride upon the railway, or see any thing but the Dodo? Perhaps he has seen the Berlin Wool. He appears to have a silent sorrow on him, and it may be that. He clears the table; draws the dingy curtains of the great bow-window, which so unwillingly consent to meet, that they must be pinned together; leaves me by the fire with my pint decanter, and a little

thin funnel-shaped wine-glass, and a plate of pale biscuits – in themselves engendering desperation.

No book, no newspapers! I left the Arabian Nights in the railway carriage, and have nothing to read but Bradshaw, and "that way madness lies." Remembering what prisoners and shipwrecked mariners have done to exercise their minds in solitude, I repeat the multiplication table, the pence table, and the shilling table: which are all the tables I happen to know. What if I write something? The Dodo keeps no pens but steel pens; and those I always stick through the paper, and can turn to no other account.

What am I to do? Even if I could have the bandy-legged baby knocked up and brought here, I could offer him nothing but sherry, and that would be the death of him. He would never hold up his head again, if he touched it. I can't go to bed, because I have conceived a mortal hatred for my bedroom; and I can't go away because there is no train for my place of destination until morning. To burn the biscuits will be but a fleeting joy; still it is a temporary relief, and here they go on the fire!

MY NOVEL; OR, VARIETIES IN ENGLISH LIFE. [2]

CHAPTER X. – Continued

Randal walked home slowly. It was a cold moonlit night. Young idlers of his own years and rank passed him by, on their way from the haunts of social pleasure. They were yet in the first fair holiday of life. Life's holiday had gone from him forever. Graver men, in the various callings of masculine labor – professions, trade, the state – passed him also. Their steps might be sober, and their faces careworn; but no step had the furtive stealth of his – no face the same contracted, sinister, suspicious gloom. Only once, in a lonely thoroughfare, and on the opposite side of the way, fell a foot-fall, and glanced an eye, that seemed to betray a soul in sympathy with Randal Leslie's.

And Randal, who had heeded none of the other passengers by the way, as if instinctively, took note of this one. His nerves crisped at the noiseless slide of that form, as it stalked on from lamp to lamp, keeping pace with his own. He felt a sort of awe, as if he had beheld the wraith of himself; and ever, as he glanced suspiciously at the arranger, the stranger glanced at him. He was

[2] Continued from the June Number.

inexpressibly relieved when the figure turned down another street and vanished.

That man was a felon, as yet undetected. Between him and his kind there stood but a thought – a vail air-spun, but impassable, as the vail of the Image at Sais.

And thus moved and thus looked Randal Leslie, a thing of dark and secret mischief – within the pale of the law, but equally removed from man by the vague consciousness that at his heart lay that which the eyes of man would abhor and loathe. Solitary amidst the vast city, and on through the machinery of Civilization, went the still spirit of Intellectual Evil.

CHAPTER XI

Early the next morning Randal received two notes – one from Frank, written in great agitation, begging Randal to see and propitiate his father, whom he feared he had grievously offended; and then running off, rather incoherently, into protestations that his honor as well as his affections were engaged irrevocably to Beatrice, and that her, at least, he could never abandon.

And the second note was from the Squire himself – short, and far less cordial than usual – requesting Mr. Leslie to call on him.

Randal dressed in haste, and went at once to Limmer's hotel.

He found the Parson with Mr. Hazeldean, and endeavoring in vain to soothe him. The Squire had not slept all night, and his appearance was almost haggard.

"Oho! Mr. young Leslie," said he, throwing himself back in his chair as Randal entered – "I thought you were a friend – I thought you were Frank's adviser. Explain, sir; explain."

"Gently, my dear Mr. Hazeldean," said the Parson. "You do but surprise and alarm Mr. Leslie. Tell him more distinctly what he has to explain."

Squire. – "Did you or did you not tell me or Mrs. Hazeldean, that Frank was in love with Violante Rickeybockey?"

Randal (as in amaze). – "I! Never, sir! I feared, on the contrary, that he was somewhat enamored of a very different person. I hinted at that possibility. I could not do more, for I

did not know how far Frank's affections were seriously engaged. And indeed, sir, Mrs. Hazeldean, though not encouraging the idea that your son could marry a foreigner and a Roman Catholic, did not appear to consider such objections insuperable, if Frank's happiness were really at stake."

Here the poor Squire gave way to a burst of passion, that involved, in one tempest, Frank, Randal, Harry herself, and the whole race of foreigners, Roman Catholics, and women. While the Squire himself was still incapable of hearing reason, the Parson, taking aside Randal, convinced himself that the whole affair, so far as Randal was concerned, had its origin in a very natural mistake; and that while that young gentleman had been hinting at Beatrice, Mrs. Hazeldean had been thinking of Violante. With considerable difficulty he succeeded in conveying this explanation to the Squire, and somewhat appeasing his wrath against Randal. And the Dissimulator, seizing his occasion, then expressed so much grief and astonishment at learning that matters had gone as far as the Parson informed him – that Frank had actually proposed to Beatrice, been accepted, and engaged himself, before even communicating with his father; he declared so earnestly, that he could never conjure such evil – that he had had Frank's positive promise to take no step without the sanction of his parents; he professed such sympathy with the Squire's wounded feelings, and such regret at Frank's involvement, that Mr. Hazeldean at last yielded up his honest heart to his consoler – and gripping Randal's hand, said, "Well, well, I wronged you –

beg your pardon. What now is to be done?"

"Why, you can not consent to this marriage – impossible," replied Randal; "and we must hope therefore to influence Frank, by his sense of duty."

"That's it," said the Squire; "for I'll not give way. Pretty pass things have come to, indeed! A widow too, I hear. Artful jade – thought, no doubt, to catch a Hazeldean of Hazeldean. My estates go to an outlandish Papistical set of mongrel brats! No, no, never!"

"But," said the Parson, mildly, "perhaps we may be unjustly prejudiced against this lady. We should have consented to Violante – why not to her? She is of good family?"

"Certainly," said Randal.

"And good character?"

Randal shook his head, and sighed. The Squire caught him roughly by the arm – "Answer the Parson!" cried he, vehemently.

"Indeed, sir, I can not speak ill of the character of a woman, who may, too, be Frank's wife; and the world is ill-natured, and not to be believed. But you can judge for yourself, my dear Mr. Hazeldean. Ask your brother whether Madame di Negra is one whom he would advise his nephew to marry."

"My brother!" exclaimed the Squire furiously. "Consult my distant brother on the affairs of my own son!"

"He is a man of the world," put in Randal.

"And of feeling and honor," said the Parson, "and, perhaps, through him, we may be enabled to enlighten Frank, and save

him from what appears to be the snare of an artful woman."

"Meanwhile," said Randal, "I will seek Frank, and do my best with him. Let me go now – I will return in an hour or so."

"I will accompany you," said the Parson.

"Nay, pardon me, but I think we two young men can talk more openly without a third person, even so wise and kind as you."

"Let Randal go," growled the Squire. And Randal went.

He spent some time with Frank, and the reader will easily divine how that time was employed. As he left Frank's lodgings, he found himself suddenly seized by the Squire himself.

"I was too impatient to stay at home and listen to the Parson's prosing," said Mr. Hazeldean, nervously. "I have shaken Dale off. Tell me what has passed. Oh! don't fear – I'm a man, and can bear the worst."

Randal drew the Squire's arm within his, and led him into the adjacent park.

"My dear sir," said he, sorrowfully, "this is very confidential what I am about to say. I must repeat it to you, because without such confidence, I see not how to advise you on the proper course to take. But if I betray Frank, it is for his good, and to his own father: – only do not tell him. He would never forgive me – it would for ever destroy my influence over him."

"Go on, go on," gasped the Squire; "speak out. I'll never tell the ungrateful boy that I learned his secrets from another."

"Then," said Randal, "the secret of his entanglement with Madame di Negra is simply this – he found her in debt – nay, on

the point of being arrested – "

"Debt! – arrested! Jezabel!"

"And in paying the debt himself, and saving her from arrest, he conferred on her the obligation which no woman of honor could accept save from her affianced husband. Poor Frank! – if sadly taken in, still we must pity and forgive him!"

Suddenly, to Randal's great surprise, the Squire's whole face brightened up.

"I see, I see!" he exclaimed, slapping his thigh. "I have it – I have it. 'Tis an affair of money! I can buy her off. If she took money from him, the mercenary, painted baggage! why, then, she'll take it from me. I don't care what it costs – half my fortune – all! I'd be content never to see Hazeldean Hall again, if I could save my son, my own son, from disgrace and misery; for miserable he will be when he knows he has broken my heart and his mother's. And for a creature like that! My boy, a thousand hearty thanks to you. Where does the wretch live? I'll go to her at once." And as he spoke, the Squire actually pulled out his pocket-book and began turning over and counting the bank-notes in it.

Randal at first tried to combat this bold resolution on the part of the Squire; but Mr. Hazeldean had seized on it with all the obstinacy of his straightforward English mind. He cut Randal's persuasive eloquence off in the midst.

"Don't waste your breath. I've settled it; and if you don't tell me where she lives, 'tis easily found out, I suppose."

Randal mused a moment. "After all," thought he, "why not?

He will be sure so to speak as to enlist her pride against himself, and to irritate Frank to the utmost. Let him go."

Конец ознакомительного фрагмента.