Baron Séguier’s Daguerreotype Equipment and Daguerreotype

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III 1. The camera and equipment, Collection Nicholas Burnett
Baron Armand Pierre Séguier was 36 when Arago announced Daguerre’s stunning invention to the French Académie des Sciences on the 7th of January 1839.

Nine months later on the 9th of October 1839 Séguier made his own announcement to the officers of the Société d’Encouragement pour l’Industrie Nationale regarding his innovative portable daguerreotype camera and processing kit [Ill 1].

The plate shows a bellows camera which looks more like something from the 1850s than 1839. It is in fact the world’s first bellows camera. At a time when other camera bodies were little more than bulky wooden boxes, Séguier had designed a relatively lightweight camera that could be folded for transportation. He had combined this with all the equipment required to process daguerreotypes in the field, introducing several important innovations while doing so.

The plate was published five months later in the March 1840 Issue (number 429) of the Bulletin of the Société d’Encouragement pour l’Industrie Nationale. A short text accompanies the plate. The delay in publishing could be accounted for by the need to engrave the finely detailed plate; the text, at less than 600 words, would not have taken long to write. A translation of the text [pg. 48] explains the diagrams on the plate. The plate shows the world’s first use of a camera tripod as well as the first photographic use of a ball and socket joint. The doubling up of the tripod as a makeshift darkroom is ingenious and is the key to being able to process plates in the field.

Although the text states that Séguier presented a photographic apparatus to the meeting, the design in the plate appears to be a work in progress. The stand and outline mercury box in Figure 9 are very different from the same equipment shown in Figure 1. In Figure 1 the mercury box forms the bottom of the carrying case, while Figure 9 shows it as a smaller, self-contained box, in outline. The arrangement in Figure 1 is impractical: the carrying box would have been too heavy on the metal stand and easy to knock over unless braced against the tripod legs. However, this very bracing would have made it difficult to open the top of the carrying case very difficult in the restricted space when inserting or removing the plate, especially as the canvas cover need to be closed during this operation. (There would have been little room left for the photographer inside the ‘darkroom’.)

Figure 1 shows the bottom of the box hinged around and up to the left to allow the mercury reservoir to be heated. Figure 2 reveals that the bottom of the case has a hinge on the left side and a catch on the right. Neither figure shows a window to allow the development to be monitored. It would not have been easy to open the box, reach down, retrieve the plate, examine the state of development and replace it for further development within the confines of the tiny tent. However, the similarity in size and shape of the mercury box in Figure 9 to the iodine fuming box in Figure 11 suggests that during the engraving process Séguier changed his design, incorporating a removable mercury box which fitted outside the iodine fuming box. This would have solved the problem of opening the box when working under the tripod and allowed some space for the photographer.

The bellows are held extended by iron rods. The rods appear to be fixed to the central part of the camera and swing out to be inserted into slots in the camera ends, being held in place by hooks that engage holes in the rods. The holes are spaced to

1 Drawn and engraved by Adolphe Leblanc.

2 'A Treatise of Photography: Containing the Latest Discoveries and Improvements Appertaining to the Daguerreotype' by Noel Raumph Lorebours, London, Longman Brown Green and Longmans, 1843, p. 12, “The portable travelling stand for the camera, invented by Baron Seguier, the ball and socket at a allows the operator to give the apparatus any direction he likes, the board c d unscrews, and the feet are jointed at e e e so as to fold in two.” The text is available here. The illustration is missing from this copy but is present in a later, translated, edition available here.

Details of Ill 1. The camera and equipment, Fig. 1, Fig. 2, Fig. 9, Collection Nicholas Burnett.
The Baron Séguière presented to the administrative council/Board of Directors, at its meeting of 9th October 1839, a camera which he brought, adapted to make it more portable, with less volume and of considerably lighter weight, without changing the size of the plates; these changes intended to make feasible, deep in the countryside, the various operations of photography, even those that seem to demand a darkroom against strong light. The apparatus, shown with all its details in plate 790, is composed of a black bellows chamber, which folds on itself and is provided with a handle to make it easily transportable; it is housed in a box also containing the iodine box, the mercury boxes, the bottles, the alcohol lamp and other accessories. The camera is supported on a tripod with a ball joint that allows it to assume all desirable positions. A mantle made of fabric impermeable to water and light thrown over the tripod converts it into a small tent free of daylight for the final preparatory operations in a practical and convenient way. Explanation of figures in plan 790.

Fig. 1. Black bellows camera placed on its tripod above the tent envelope within which are arranged the apparatus for the preparation of the plates. Closing the tent by the buttons, one finds one perfectly sheltered from the influences of light. The camera is supported on a tripod with a ball joint that allows it to assume all desirable positions; these changes intended to make it more portable, with less volume. The camera is provided with a handle to make it easily transportable; it is housed in a box also containing the iodine box, the mercury boxes, the bottles, the alcohol lamp and other accessories. The camera is supported on a tripod with a ball joint that allows it to assume all desirable positions; a mantle of waterproof and light canvas, a black canvas wrap, tent-shaped. The camera is provided with a handle to make it easily transportable; it is housed in a box also containing the iodine box, the mercury boxes, the bottles, the alcohol lamp and other accessories.

Fig. 2. The camera open, they are pierced at intervals, the holes aligning with hooks, g attached to the body. The lens housing is also a handle to make it easily transportable; it contains the iodine box, the mercury vapour box, vials, trays, the spirit lamp. The support shaped as a tripod binds to the camera by a ball joint; this allows the junction to give the camera all positions. A mantle made of fabric impermeable to water and light thrown over the tripod converts it into a small tent under which one practices conveniently, and sheltered from the daylight, the various preparatory and final operations.

The desire not to deviate from proportions that I thought at first essential to the success of the operations induced me to give the presented device too great dimensions; experience leads me to think it will be possible to further reduce significantly the weight and volume of a future construction. Clearly there is some confusion in the report between the carrying box and the camera. Perhaps the carrying box was not brought or had not yet been completed. Many other reports spread the news of Séguière’s work and he even featured in the famous cartoon “Daguerreotypomania” by Theodore Maurisset which was published in December 1839 (III-4). Séguière is shown in the foreground on the left holding a double flange arrangement does not play a role in solving the focussing problem. This means that the double flange arrangement does not play a role in solving the focussing problem and is purely a space saving modification. The length of the lens between the flanges is almost double the distance between the holes in the iron rods. If the length had been ¾ of the distance then the double flange arrangement might have helped to solve the focussing problem. The lens has a screw fitting which would have allowed a little focussing movement, by unscrewing it slightly but would this have been enough to fully overcome the difficulty? The problem could be solved in a number of ways but is further evidence of a work in progress. In addition, the iron rods are placed within the bellows and penetrate the front and back of the camera, creating eight places where light could potentially leak in. Within a short time of using the camera, Séguière would probably have changed the arrangement and placed the rods outside the bellows.

Fig. 2 shows that the holes in the rods are staggered to compensate for one rod in each pair being hinged behind the other. The engraver has made a mistake in the upper pair and got the holes the wrong way around. The plate does not identify a ground-glass screen and the text is hinged behind one. Nor is a detached screen shown in the cross-section illustrating how the box is packed (nor is the spirit burner). However, the exact construction of the plate holder and tail board are not clear from the illustrations, so it is probable that one of the layers in the cross-sections represents the ground glass screen. The lens housing is also innovative in that it has a screw fitting at each end allowing it to be unscrewed after use, slid into the body of the camera and screwed into the mounting rod again to hold it firm within the camera body during transportation, thus saving space. That the print shows a work in progress is supported by another presentation Séguière made a few weeks later on the 4th November 1839 to the Académie des Sciences. The report of the meeting states that: “Mr. Séguière exhibited to the Academy a photographic apparatus which he had somewhat modified.” The changes that I thought could usefully make to the apparatus currently adopted, said Séguière, aim to decrease the weight and volume of the entire apparatus. They especially tend to make feasible in the countryside the various operations of photography, even those that seem to need a shelter against strong light. The unit that I present consists of a camera and its support. The camera is provided with a handle to make it easily transportable; it contains...
WHO WAS BARON ARMAND-PIERRE SÉGUIER?
He was born in Montpellier on the 3rd of July 1803 into a noble family. From 1824 he followed his father’s profession and practised as a lawyer. At the same time he pursued a longstanding interest in science and mechanics covering such diverse subjects as clockwork and locomotives.

He published his “Mémoire sur les appareils producteurs de vapeur, lu à l’Académie des Sciences” in 1832 and became a member of the Académie des Sciences the following year. He seems to have been a very active member as his name appears on numerous occasions in the Comptes Rendus, including his 1840 paper relating to sensitising daguerreotype plates. On the 14th of February 1842 Séguier was elected to the Royal Scottish Society of Arts, including his 1840 paper relating to sensitising daguerreotype plates. On the 14th of February 1842 Séguier was elected to the Royal Scottish Society of Arts.

He was able to devote himself more fully to his mechanical and scientific interests. The same year he published, “Perfectionnements dans la marine à vapeur”. In May 1851 he was made an honorary member of the British Meteorological Society and received the Légion d’honneur. 1855 finds Séguier on the list of the first members in the French Society of Photography. He died in 1876. Returning to 1839, most interestingly, “Séguier was part of a small circle of amateurs that surrounded Jacques-Louis-Mandé Daguerre”.

As a member of the Académie des Sciences Séguier may have been present at Arago’s announcement to that body in January 1839. Was he present when the process was first publicly explained, step by step, before a joint session of the Académie des Sciences and the Académie des Beaux-Arts on the 19th of August? If we assume Séguier’s first detailed knowledge of the process dates from the 19th of August, this gives a mere seven weeks before Séguier was able to present his newly designed and constructed camera on the 9th of October. Again, this suggests that the camera and equipment was still being refined.

Only one daguerreotype by Séguier is known, the beautiful, “Still Life with Plaster Casts” in the J. Paul Getty Museum [III 5]. Séguier donated two other plates to the Académie des Sciences in 1840 along with a description of his method for preparing the plates but these daguerreotypes cannot be located and are presumed lost. Could the Getty image have been taken with Séguier’s camera? The daguerreotype plate measures 8½ x 6½ inches (21.6 x 16.2 cm) whereas, the camera’s maximum plate size appears to be around 8 55/64th x 5 20/64th inches (22½ x 13½ cm), an unusual size for daguerreotypes.

It is most unlikely that the engraver has made a mistake as the engraving is copied from the engraver’s own measured drawing and is scaled. The plate holder is too small for this daguerreotype to have been taken with this camera. The J. Paul Getty Museum dates the Séguier daguerreotype to

7 Sur l’ioduration des planches métalliques destinées à recevoir les images, et ser le rôle que jouent les bandes de plaque don’t on a coutume de les entourer”, Armand Pierre Séguier, in Comptes rendus hebdomadaires des séances de l’Académie des Sciences, January 6, 1840.
8 The Edinburgh New Philosophical Journal: Exhibiting a View of the Progressive Discoveries and Improvements in the Sciences and the Arts”, Adam and Charles Black, 1842, p. 413. Available on Google Books
9 Pinson
10 The 1850 And 1851 Membership Lists of The British Meteorological Society, p. 6. Available here
11 Wikipedia
13 Getty Edu consulted on 11/5/2014
14 Accession number 2002.41
15 Comptes rendus hebdomadaires des séances de l’Académie des Sciences”, 1840, p.391
16 Pinson, catalogue entry
17 Size calculated by measurement against the printed scale in the illustration
between 1839 and 1842. It may be possible to date it more precisely. The plate appears similar to plates produced by iodine sensitisation alone. The addition of bromine or chlorine to the sensitisation process was discovered in mid to late 1840. It was published by the end of the year and was then rapidly adopted. An iodine-sensitised plate is likely to be earlier than 1842.

In 1841 the optician Charles Chevalier (1804-59) wrote that, “Groups of art objects form very gracious images and are easy to reproduce (...) One should choose but the best models, such as the beautiful specimens by Mr. Hube
t and Baron Séguier. The latter gave us one of his groups that, although it was done a long time ago by the old procedure, still excites the admiration of artists”.

Could the Getty plate be the plate referred to here? Quite possibly, the Getty plate was clearly thought to be of a quality suitable to be presented by Séguier to the curator of antiquities at the Louvre, the Comte de Clarac, as recorded by an inscription on the verso.

The “old procedure” mentioned by Chevalier is Daguerre’s original process which used iodine sensitisation alone, exactly the same as the Getty plate. Writing in 1841, the phrase “done a long time ago” may refer to 1840 or more likely, 1839.

Séguier had learnt the daguerreotype process from Daguerre himself. As Geoffrey Batchen notes: “In order to promote his invention, Daguerre offered free public demonstrations at various establishments in Paris after August 1839, and Baron Armand-Pierre Séguier appears to have been among his most enthusiastic followers.”

Intriguingly, the statue of Jupiter in the Séguier plate also appears in a plate by Daguerre (Ill 6). The Getty catalogue lists the Séguier plate as being by “Baron Armand-Pierre Séguier, possibly in association with Louis-Jacques-Mandé Daguerre.” This association seems likely. The plate size would not fit Séguier’s camera though it would have fitted Daguerre’s. Since Séguier was able to present a camera to the meeting on the 9th of October he would most probably have used his own camera after that date, and possibly a little before. The daguerreotype may therefore date from between the 19th of August and the 9th of October 1839.

Séguier’s photographs are extremely rare. He did not exhibit his work and seems to have been more interested in other branches of science and photography: Containing the Latest Discoveries and Improvements Appertaining to the Daguerreotype by Noel Paymal Lerebours, London, Longman Brown Green and Longmans, 1843. Available at Google Books

20. The Getty catalogue records the verso as being inscribed in black ink at the upper centre, on brown backing paper, by Séguier: ‘Au Cte de Clarac / par / son ami B[aro]n Séguier / amicitae signum” inscribed in black ink, at upper centre under Séguier’s inscription, in a later unknown hand: “vente de clarac -- avril 1847”.
mechanics. His other early contributions to photography include a new design for an iodine fuming box\footnote{Guide Du Photographe, Deuxieme Partie. Nouveaux Mémoires Et Renseignements*, Charles Chevalier, Paris, Charles Chevalier 1854. From Google books. P. 92.} and a type of washing tray\footnote{Mélanges Photographiques*, Marc Antoine Augustin Gaudin in La Lumiere, No. 17, April 23rd 1853, p.67.}. His contributions to photography seem to have then tailed off. In the early 1850s, however, he experimented with making direct wet collodion positives by backing them with canvas coated with black wax. On the 1st of December 1852 he is recorded as presenting Niépce de Saint-Victor’s unfixed colour daguerreotypes to the Société d’Encouragement pour l’Industrie Nationale\footnote{The New York Times, the 3rd of January 1853.}. Séguier’s camera and equipment made more of a lasting impact than his photography. The use of a tripod with a ball-and-socket joint was widely reported and adopted. Camera bellows and the various space and weight saving innovations were less easily described and needed a costly illustration for clarity. This may account for the delay in the adoption of bellows by camera makers. Although one beautiful daguerreotype by Séguier has survived, his ground-breaking camera and innovative equipment are not known to have survived to the present day.

\footnote{M. Robert se sert exclusivement des cuvettes à fond de glace ou de verre double, avec bords en bois vernis au pinceau, à l’aide de vernis épais de copal et de laque. Ces cuvettes sont très commodes, présentent un fond bien plat et si des accidents arrivent on peut facilement les raccommoder. En effet, si quelques fissures se font on les rebouche à l’aide d’un pinceau et de vernis. Si le fond se casse on adapte un autre, ou s’il n’y a qu’une simple fente on colle une bande de papier que l’on enduit de vernis et la cuvette peut très bien servir. On peut construire des cuvettes de toutes grandeurs, ce qui est très difficile et même impraticable avec la porcelaine; on doit se rappeler que l’idée première de ces cuvettes appartient à M. le baron Séguier.’ Roughly translated as, ‘Mr. Robert uses exclusively trays with a glass base or double glass, with edges varnished with a wooden brush, using thick copal varnish and lacquer. These trays are very convenient, have a good flat bottom and if accidents happen you can easily mend them. Indeed, if there are some cracks they can be blocked again using a brush and varnish. If the bottom breaks we adapt another, or if there is a single crack gluing a strip of paper that is coated with varnish and the bowl may well serve. You can build bowls of all sizes, which is very difficult and even impractical with porcelain; it must be remembered that the first idea of these bowls belongs to Baron Seguier.’}

\footnote{55. Mélanges Photographiques, Marc Antoine Augustin Gaudin in La Lumiere, No. 17, April 23rd 1853, p.67.}