

VPAS 7380.001 (87906)
Charles Darwin and the Evolution of Beauty
M-W 4-6:45

Fall 2020
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Arts & Humanities

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Monday November 2
Darwin's Camera



Monday November 2

Phillip Prodger's *Darwin's Camera: Art and Photography in the Theory of Evolution*:

- Preface xi-xx
- Introduction xxi-xxv
- Chapter 1 3-20
- Chapter 3 35-50

Wednesday November 4 Individual Online Meetings with Professor

1:30 Damian Enyaosah

2:30 Sara Scherper

3:00 Meagan Severson

3:30 Kevin Johnson

4:00 Nick Payne

4:30 Eric Sampson

5:00 Mya Adams

Wednesday November 11 Contemporary Art and the Aesthetics of Natural Selection/Guest Speaker Ellen K. Levy

- Dr. Ellen K. Levy, "Contemporary Art and the Aesthetics of Natural Selection," *Darwin and Theories of Aesthetics and Cultural History*, Barbara Larson and Sabine Flach, eds. (London: Routledge, 2013) 145-163.

Wednesday November 18 Student Presentations

Wednesday November 25 Student Presentations



Photography curator Phillip Prodger holds a rare 1839 daguerreotype he discovered at the Peabody Essex Museum. (Photo by Bill Greene/The Boston Globe via Getty Images)

Prodger is a museum professional, curator, author, and art historian. He is the Senior Research Scholar at the Yale Center for British Art and formerly served as Head of Photographs at the National Portrait Gallery, London.

Time, the camera, and scientific study of emotions ...

The study of Expression is difficult, owing to the movements being often extremely slight, and of a fleeting nature. A difference may be clearly perceived, and yet it may be impossible, at least I have found it so, to state in what the difference consists. When we witness any deep emotion, our sympathy is so strongly excited, that close observation is forgotten or rendered almost impossible; of which fact I have had many curious proofs. Our imagination is another and still more serious source of error; for if from the nature of the circumstances we expect to see any expression, we readily imagine its presence. Notwithstanding Dr. Duchenne's great experience, he for a long time fancied, as he states, that several muscles contracted under certain emotions, whereas he ultimately convinced himself that the movement was confined to a single muscle.

Darwin, *The Expression of the Emotions in Man and Animals*, 13

<http://darwin-online.org.uk/content/frameset?itemID=F1142&viewtype=text&pageseq=1>

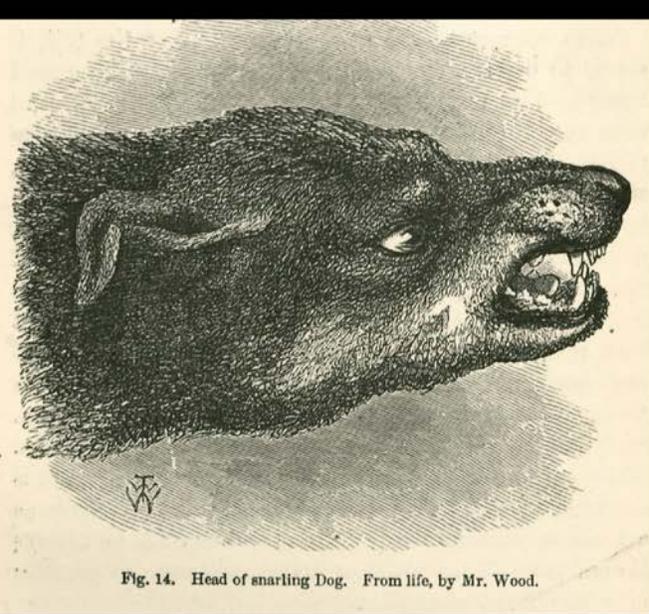


Fig. 14. Head of snarling Dog. From life, by Mr. Wood.



Fig. 15. Cat terrified at a dog. From life, by Mr. Wood.



Fig. 8. The same caressing his master. By Mr. A. May.



Fig. 10. Cat in an affectionate frame of mind, by Mr. Wood.

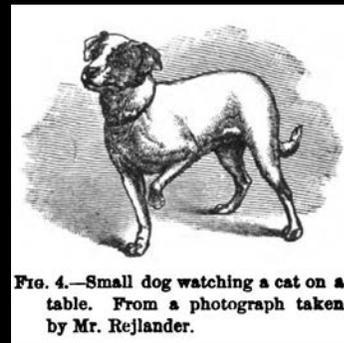
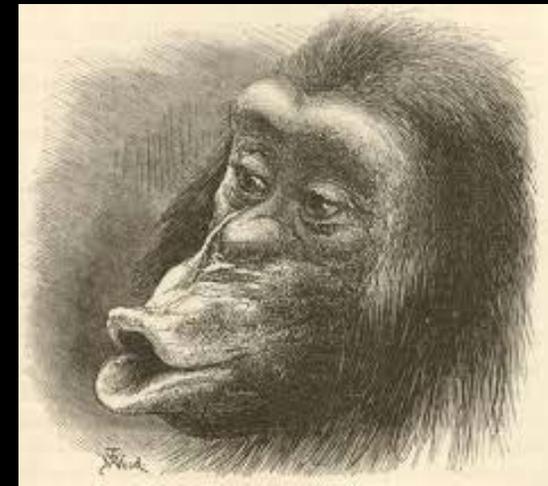
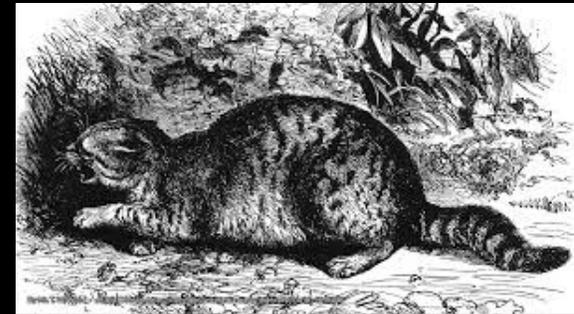
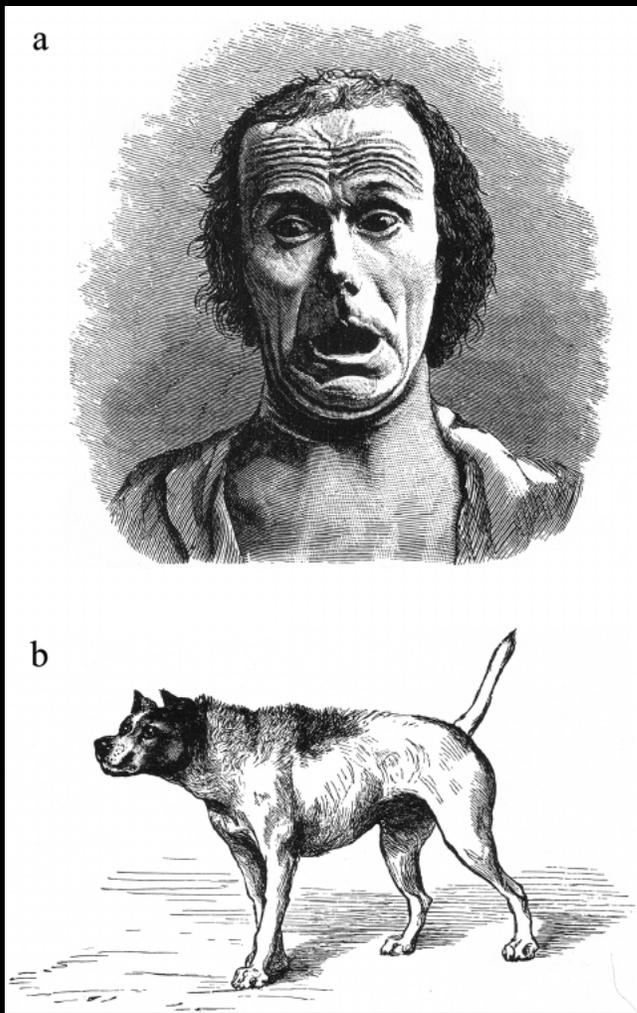
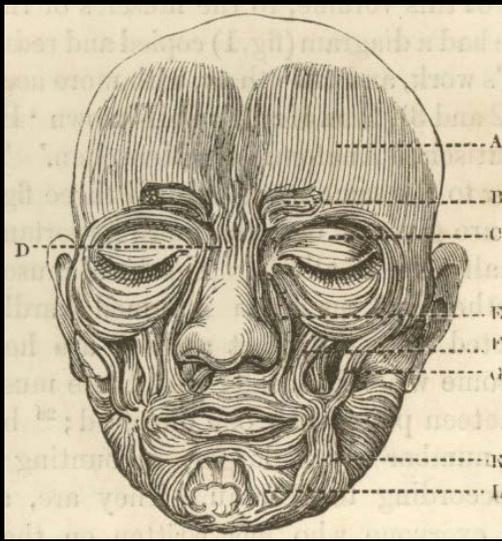


Fig. 4.—Small dog watching a cat on a table. From a photograph taken by Mr. Rejlander.





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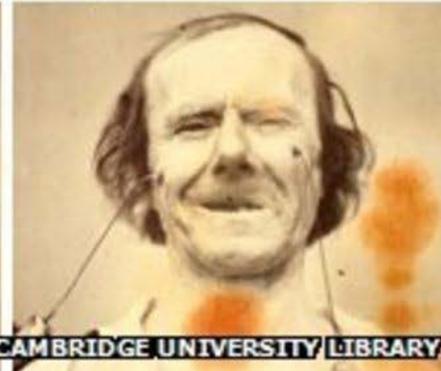
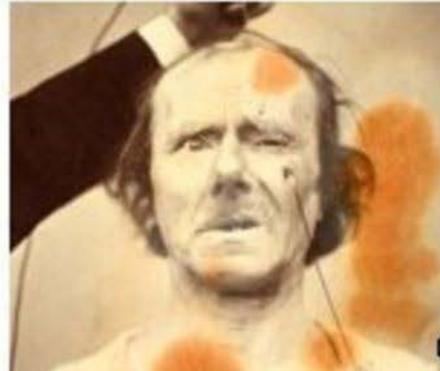
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4



6



CAMBRIDGE UNIVERSITY LIBRARY



Sebastiano del Piombo, *The Raising of Lazarus*, 1517-19
Michelangelo supplied drawings for some figures.

Passion Pamphlets

Physiognomy – a study of individual faces for science, art,
and architecture (a pseudoscience)

Pathognomy – the external appearance of the passions (a
pseudoscience)



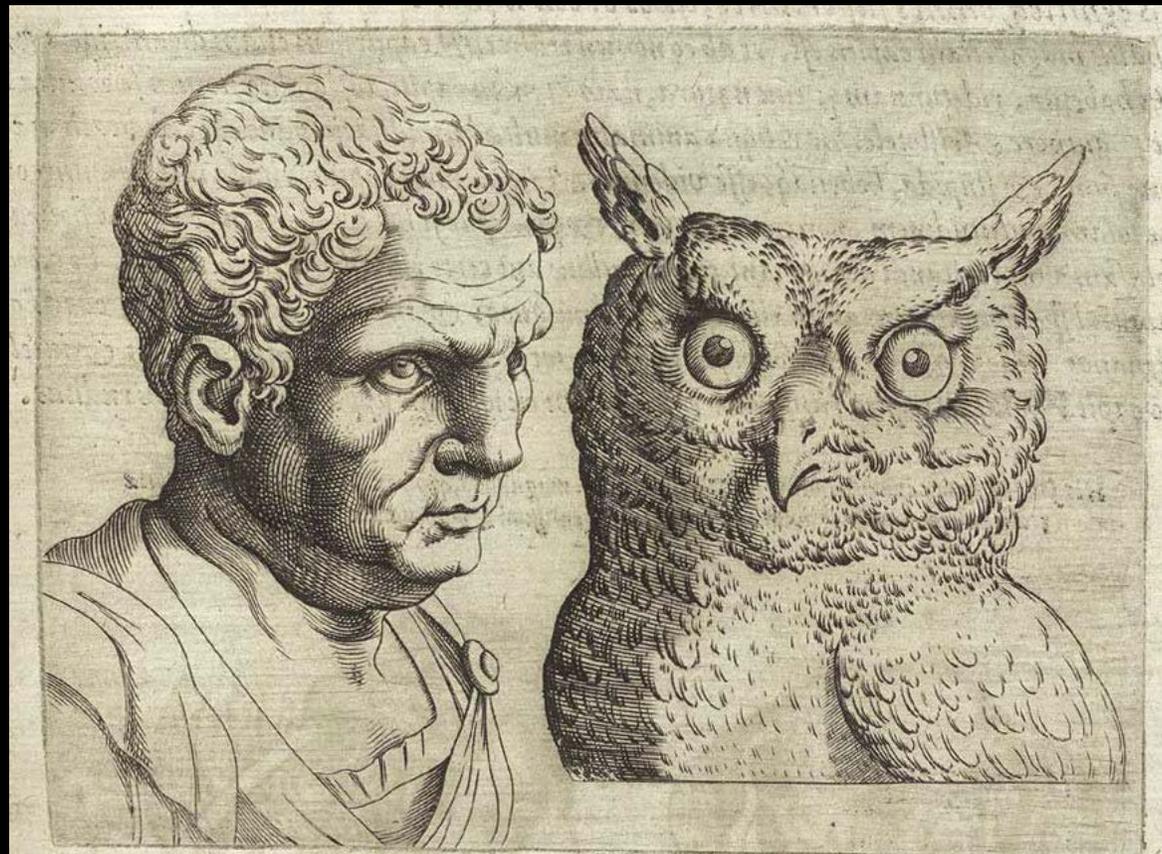
Tranquilla frons.

QVI serenam, & exporrectam habent frontem, assentatores, ab effectu huiusmodi reddere consueto. Hoc signum in canibus manifestum est, quod assentantes frontem exporrigant. Aristoteles in Physiognomicis. Intelligendo de domesticis canibus. Albertus ab eo. Qui laxam, & tanquam ridentem habent frontis cutem, blandi quidem, sed non innoxij, sunt enim palam blandientes, clam detractores.

Tauri, & leonis nubilam frontem hac figura pinximus cum humans, cuiusmodi irati efformare solent ne quid indigentia, & obseruationis contra nos criminatum sit.

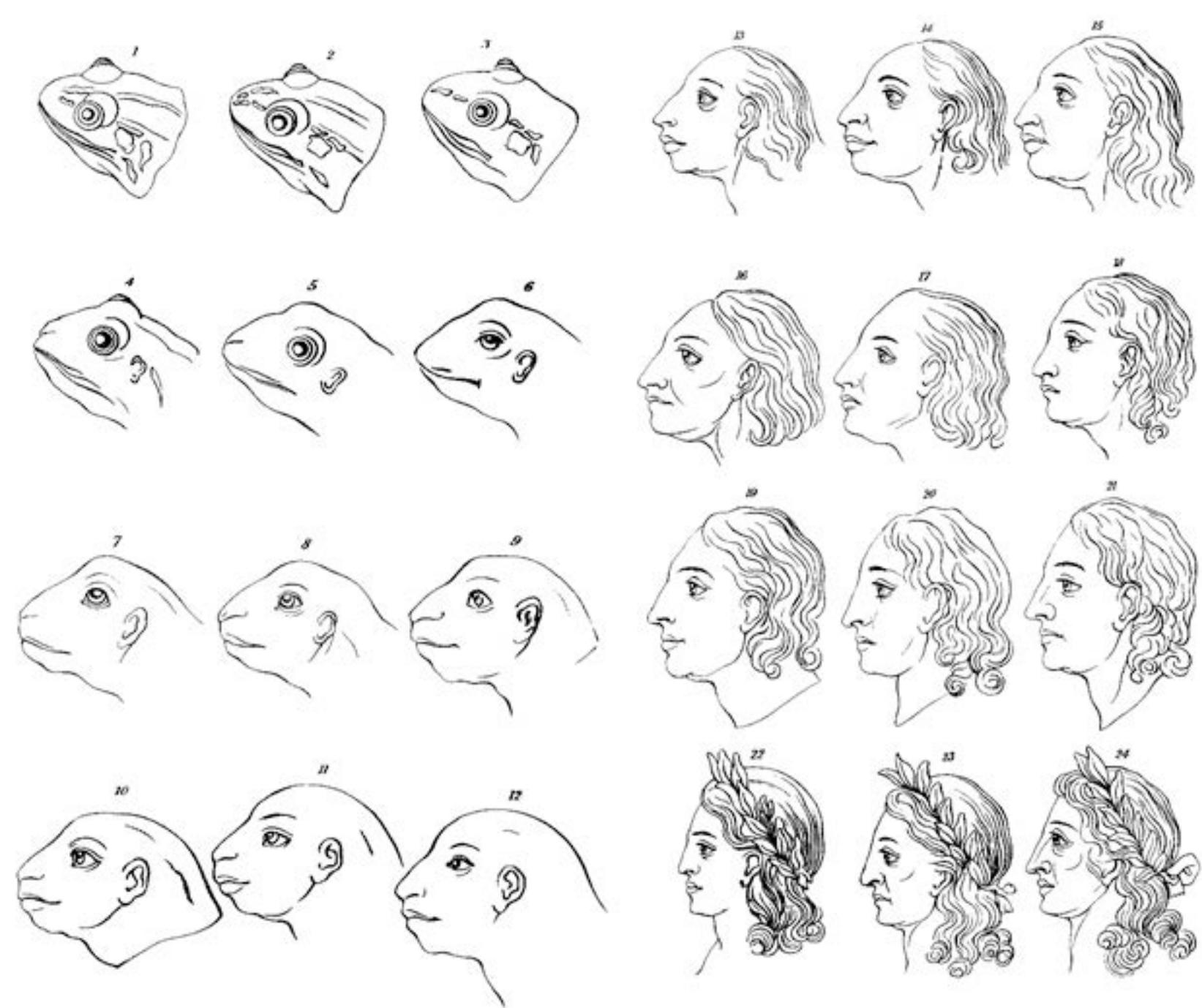


H Nebu-



Maximum Caput.

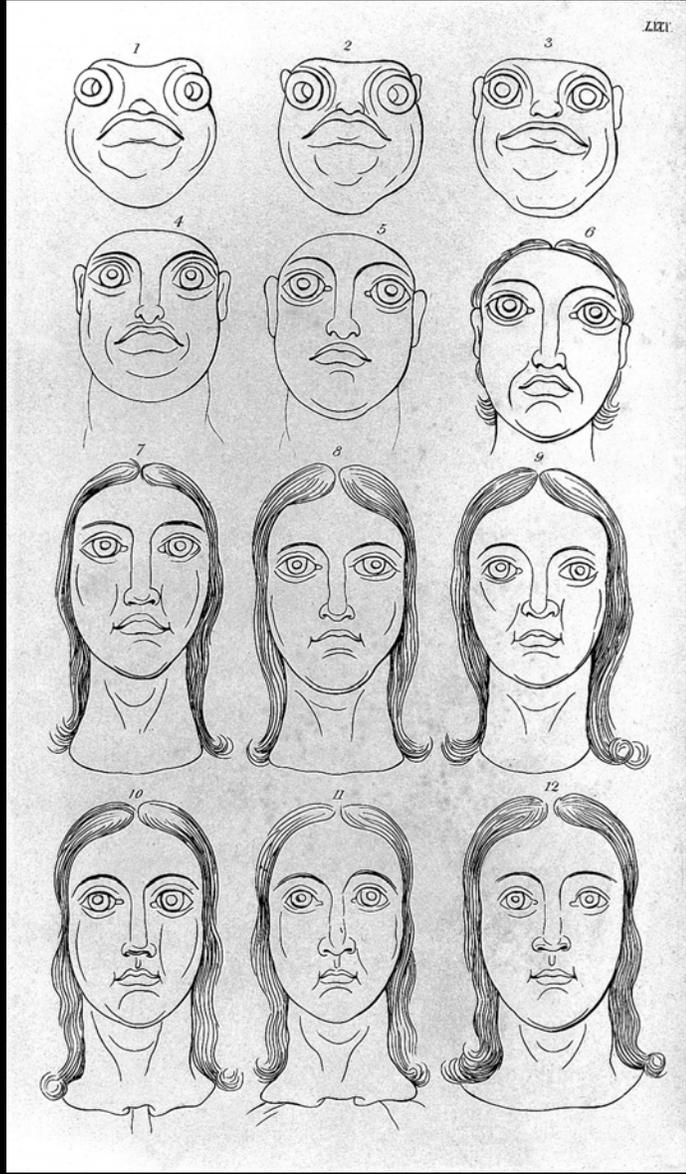
Giambattista della Porta (1535-1615)
Author of *On Human Physiognomy* (1586)



Lavater, Frog to Apollo, 1789

Author of *Fragments of Physiognomy*
(1772)

J. C. Lavater, *Essays on physiognomy*, 1789



Timeline in *Darwin's Camera*

- 1806 Charles Bell's *Essays on the Anatomy of Expression in Painting* published
- 1809 Birth of Charles Darwin
- 1816 Fitzwilliam Museum, Cambridge, founded
- 1824 National Gallery of Art, London, founded
- 1825-27 Darwin studies at University of Edinburgh, attends Charles Bell's lectures on expression
- 1831-36 The voyage of the HMS Beagle
- 1839 *Journal of Researches*, also titled *The Voyage of the Beagle*, published; Invention of photography announced
- 1851-52 Wet-plate negatives available
- 1857 Oscar Rejlander, *The Two Ways of Life*, exhibited
- 1859 *On the Origin of Species* published
- 1862 GB Duchenne de Boulogne, *Mechanism of Human Facial Expression*, published
- 1865 Louis Agassiz, photographic survey of Brazil to disprove evolution
- 1869 Thomas Henry Huxley begins photographic survey of peoples of British Empire
- c. 1869 Darwin begins to collect photographs of emotional expressions
- 1871 *Descent of Man* published
- 1872 *Expression of the Emotions in Man and Animals* published
- 1872-73 Muybridge photographs of galloping horses
- 1874 First gelatin dry-plate negatives available (not mass-produced until 1880)
- c. 1878 Francis Galton begins to make composite photographs
- 1882 Death of Charles Darwin

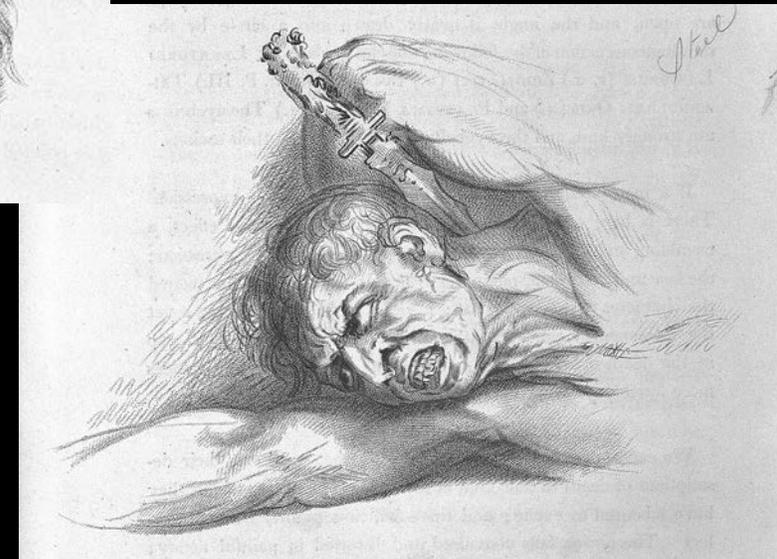
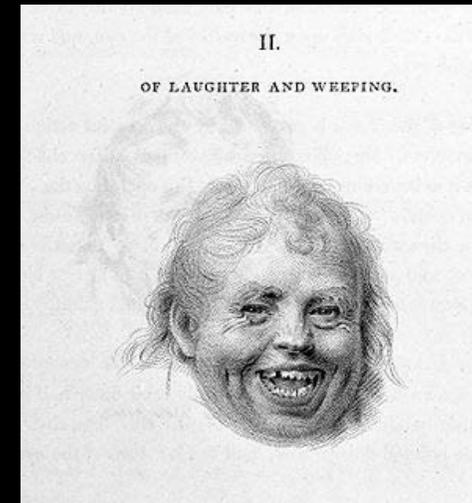
- 1806 Charles Bell's *Essays on the Anatomy of Expression in Painting* published
- 1825-27 Darwin studies at University of Edinburgh, attends Charles Bell's lectures on expression

Sir Charles Bell (1774 – 1842) was a Scottish surgeon, anatomist, physiologist, neurologist, artist, and philosophical theologian. He is noted for discovering the difference between sensory nerves and motor nerves in the spinal cord. He is also noted for describing Bell's palsy.

Charles Bell's treatise *The anatomy and philosophy of expression as connected with the fine arts* of 1844 was intended primarily for artists as a guide to the representation of expression, understood in terms of man's internal life, both physiological and emotional. Fundamentally, Bell believed that knowing how bodily functions led to the expression of emotion would enable artists to better represent such emotions in their art. Bell's aesthetics were in line, to an extent, with the classical ideal of proportional beauty. However, he insisted that understanding man's bodily mechanisms should take priority over ideas about formal beauty.

Given that Bell's book was primarily a handbook for artists, it is important to consider the visual means by which he chose to demonstrate this information. The book is heavily illustrated, with images integrated in and around the text. Additionally, quotations are distributed throughout the treatise alluding to various literary sources including Shakespeare and Spencer. Bell's inclusion of literary references alongside his explanation of the physiology of expression reflects the still relatively porous boundaries between humanistic and scientific discourses.

<https://www.thinking3d.ac.uk/Bell1844/#:~:text=Charles%20Bell's%20treatise%20The%20anatomy,life%2C%20both%20physiological%20and%20emotional.>

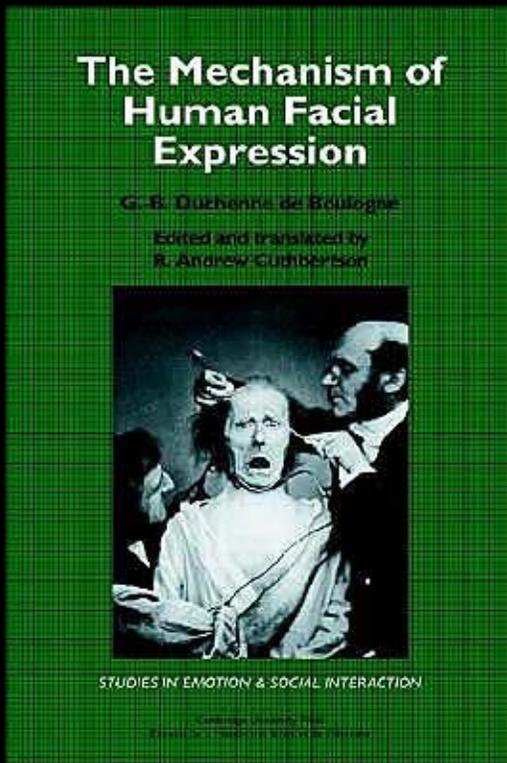


In *The anatomy and philosophy of expression as connected with the fine arts*, Bell asserted that emotion was an exclusively human trait, a reflection of intellectual and mental life. In his treatise, he compares animals to humans both visually and textually. Human emotions were multiple and complex, whereas animal expressions were few and generalised. Bell asserts that humans have the necessary muscles for the capacity of expression whilst animals do not. This echoes the natural theological argument that man was situated at the top of the natural hierarchy. Furthermore, this is reflected visually in the stark contrast of how the animals and humans are presented: the human figures embody an expressive, gestural quality whilst the animals are depicted in greater anatomical detail.

<https://www.thinking3d.ac.uk/Bell1844/#:~:text=Charles%20Bell's%20treatise%20The%20anatomy,life%2C%20both%20physiological%20and%20emotional.>

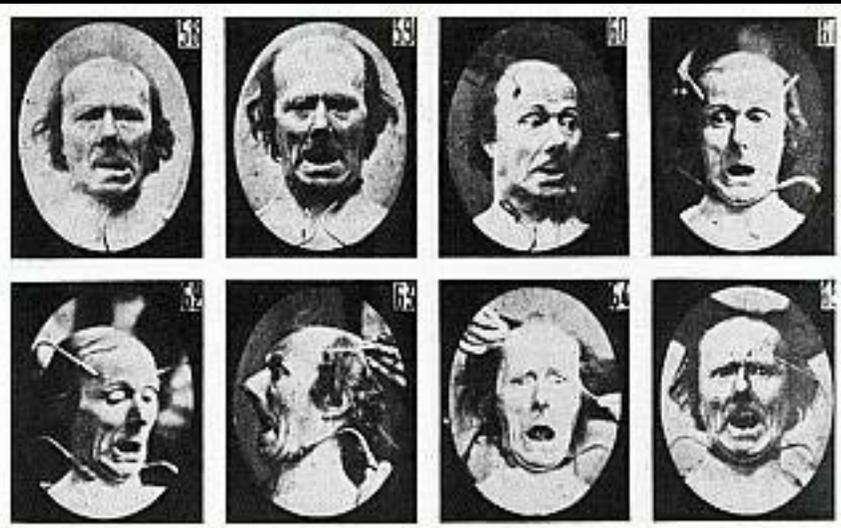


- 1862 GB Duchenne de Boulogne, *Mechanism of Human Facial Expression*, published



Guillaume-Benjamin-Amand Duchenne (de Boulogne) (1806-1875) was a French neurologist who revived Galvani's research and greatly advanced the science of electrophysiology. The era of modern neurology developed from Duchenne's understanding of neural pathways and his diagnostic innovations including deep tissue biopsy, nerve conduction tests, and clinical photography.

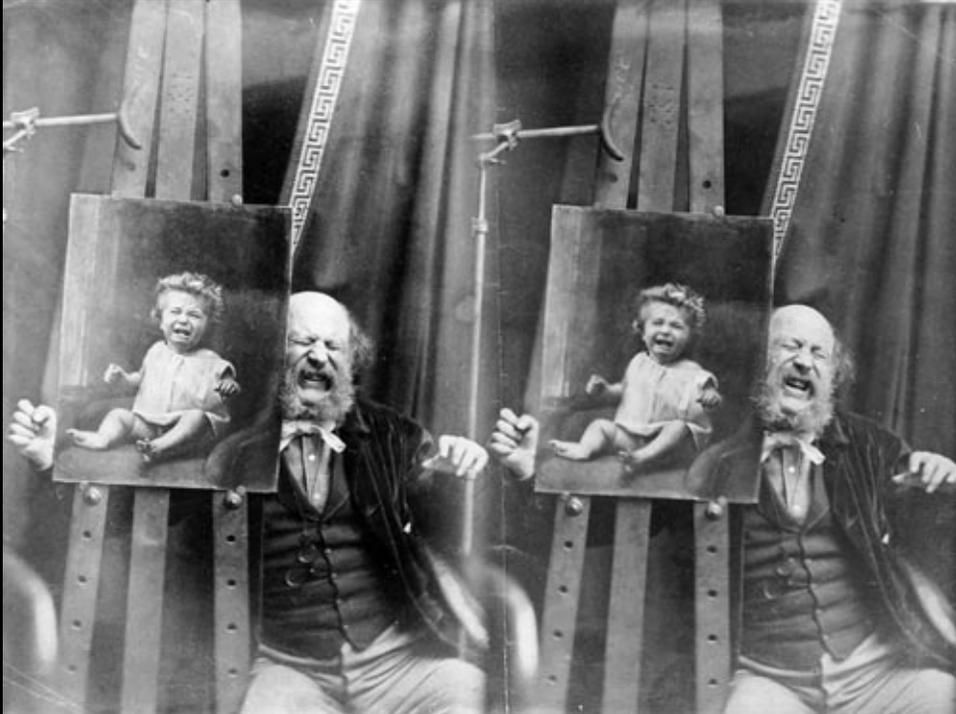




In 1862, the physician Duchenne de Boulogne illustrated his *Mécanisme de la physionomie humaine* with photographs that reproduced the electrical experiments he had carried out on the faces of different patients. The aim of these localized faradizations was to determine the specific muscles involved in the expression of the passions.

Beatriz Pichel, "From facial expressions to bodily gestures: Passions, photography and movement in French 19th-century sciences" (2015)

- 1857 Oscar Rejlander, *The Two Ways of Life*, exhibited



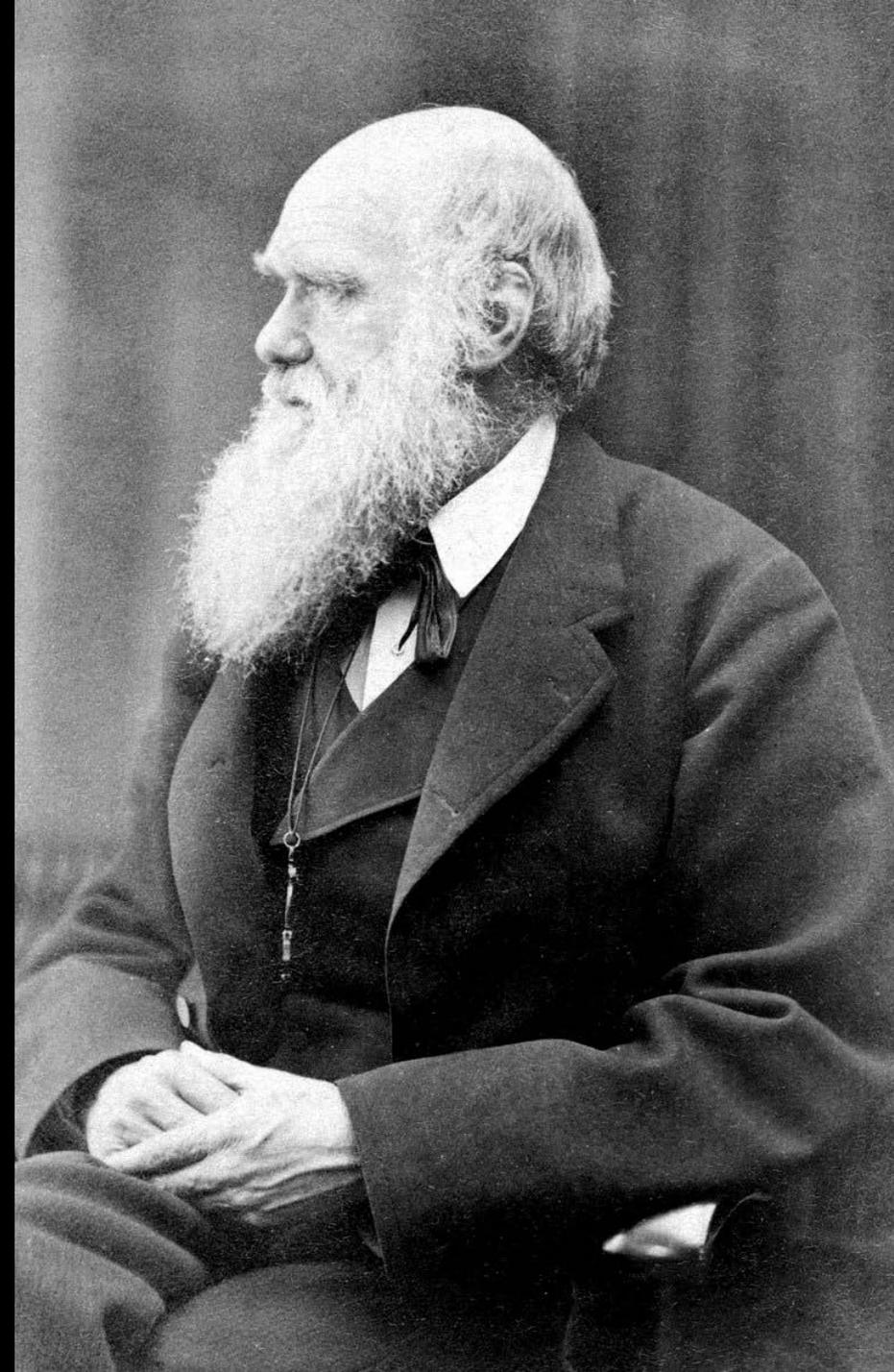
Oscar Gustave Rejlander (1813 – 1875) was a pioneering Victorian art photographer and an expert on photomontage. His collaboration with Darwin on *The Expression of the Emotions in Man and Animals* placed him in the history of the behavioral sciences and psychiatry.





Left: A page of photographs by Oscar Rejlander from the Darwin Archive, 1871-1872. Albumen prints.

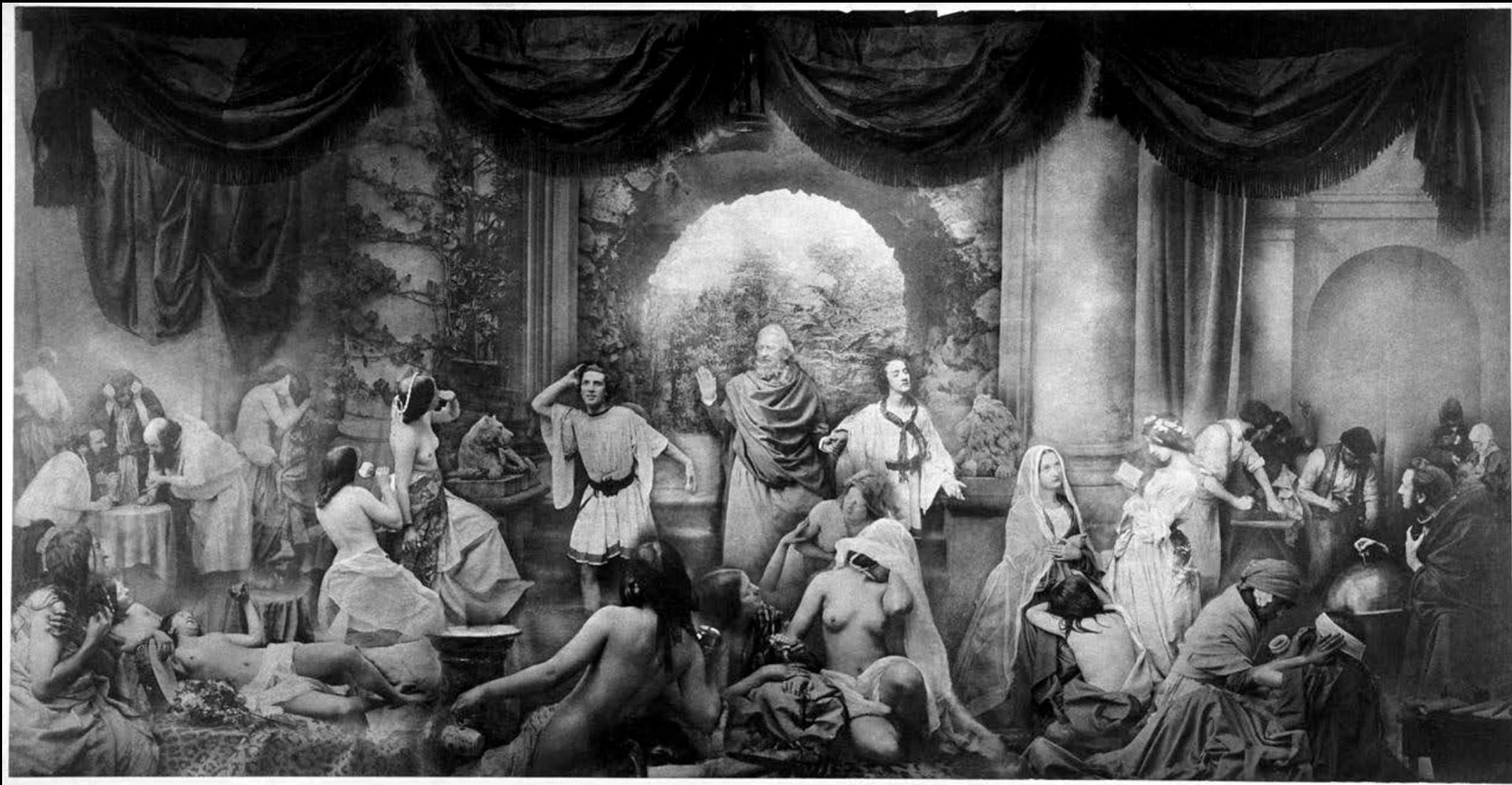
Right: Charles Darwin photograph by Oscar Rejlander, circa 1871



Victorian Composite Photography

Oscar Gustave Rejlander, *Two Ways of Life*, 1857

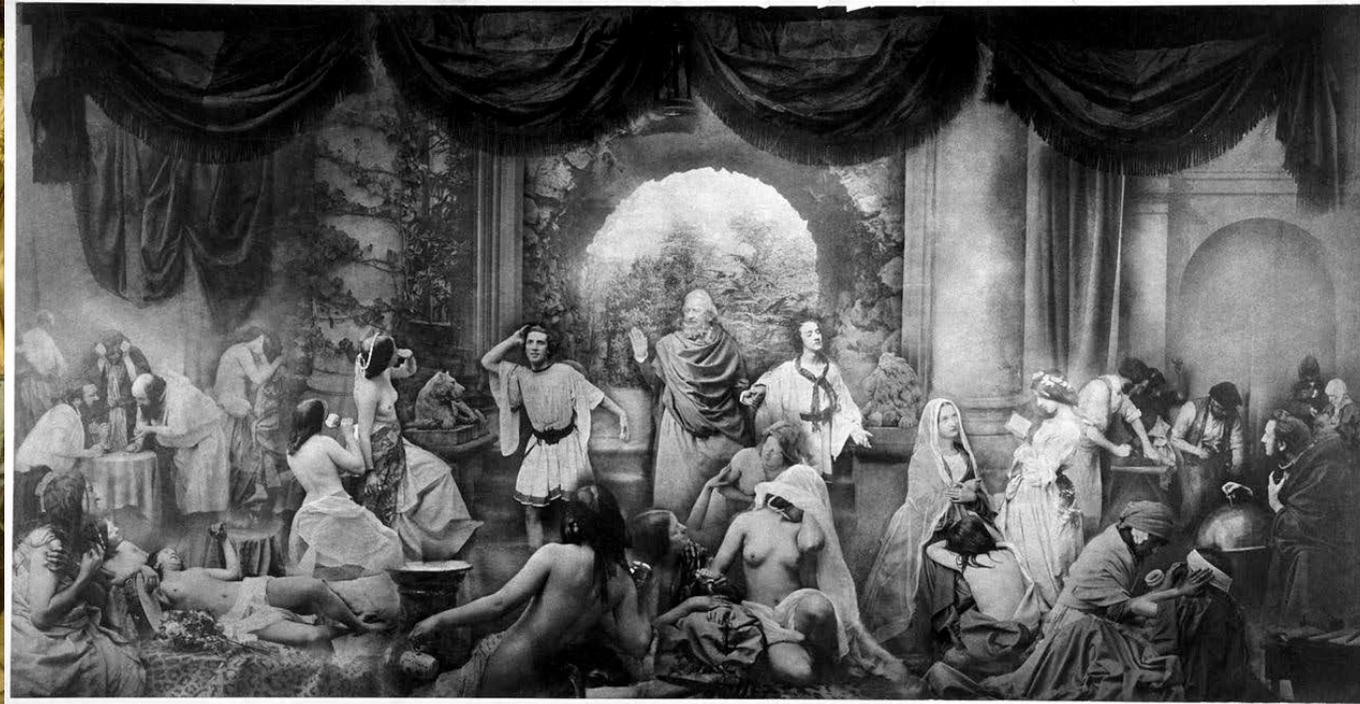
In 1857 he made his best-known allegorical work, *The Two Ways of Life*. This was a seamlessly montaged combination print made of thirty-two images in about six weeks. First exhibited at the Manchester Art Treasures Exhibition of 1857, the work shows two youths being offered guidance by a patriarch. Each youth looks toward a section of a stage-like tableaux vivant - one youth is shown the virtuous pleasures and the other the sinful pleasures.



classical artistic medium



Thomas Couture, *The Romans of the Decadence*, 1847



Oscar Gustave Rejlander, *Two Ways of Life*, 1857



- 1865 Louis Agassiz, photographic survey of Brazil to disprove evolution



Jean Louis Rodolphe Agassiz (1807 – 1873) was a Swiss-born American biologist and geologist recognized as an innovative and prodigious scholar of Earth's natural history. Agassiz's resistance to Darwinian evolution, belief in creationism, and the scientific racism implicit in his writings on human polygenism has tarnished his reputation.

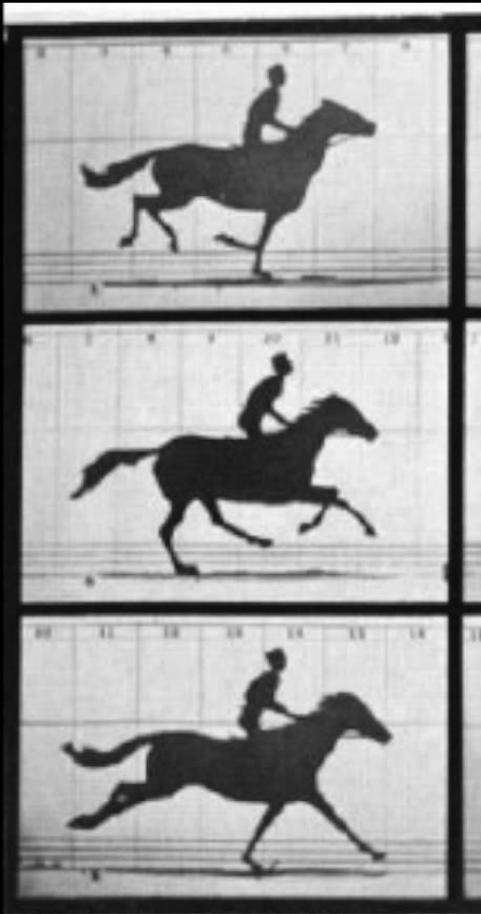


The daguerreotypes were commissioned by Louis Agassiz, a Swiss-born zoologist and Harvard professor who is sometimes called the father of American natural science. They were taken in 1850 by J.T. Zealy, in a studio in Columbia, S.C.



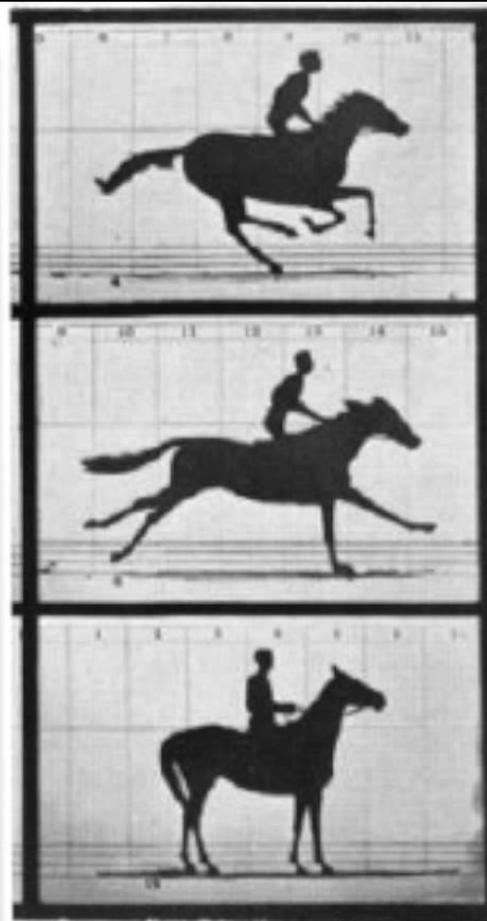
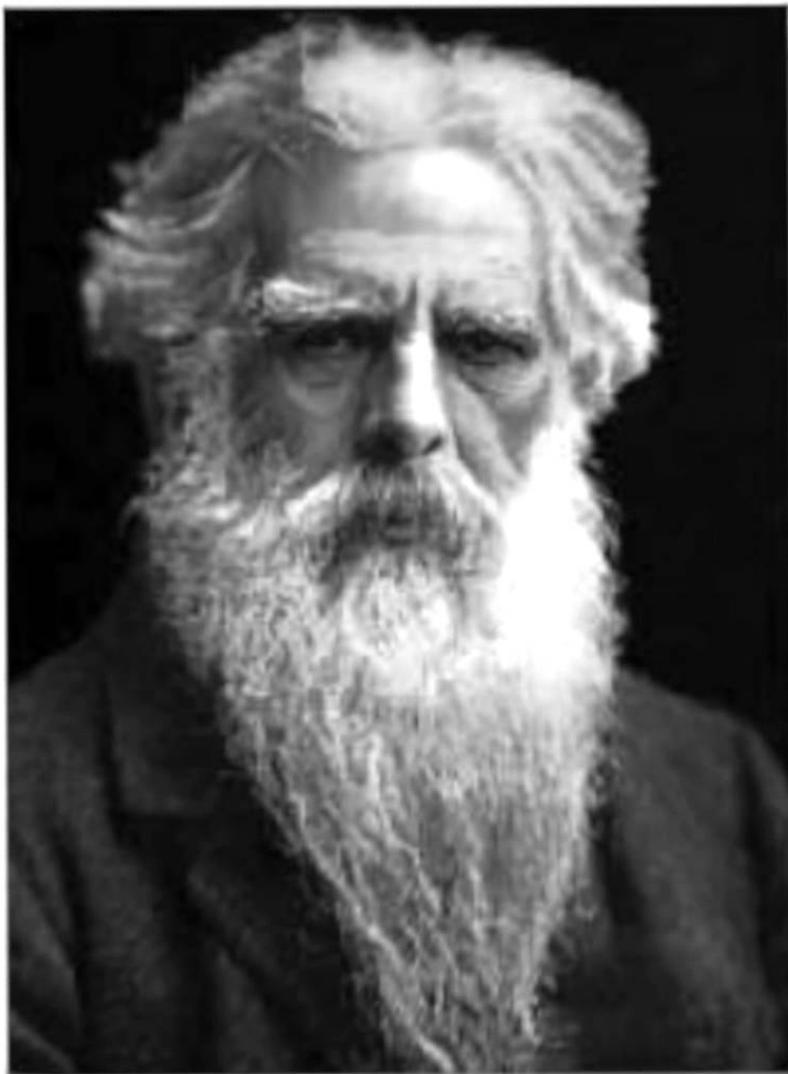
<https://www.nytimes.com/2019/03/20/us/slave-photographs-harvard.html#:~:text=The%20daguerreotypes%20were%20commissioned%20by%20a%20studio%20in%20Columbia%2C%20S.C.>

- 1872-73 Muybridge photographs of galloping horses



Copyright, 1878, by MUYBRIDGE.

"SALLIE GARDNER," owes
The negatives of these photographs
secured in each two
lines sep

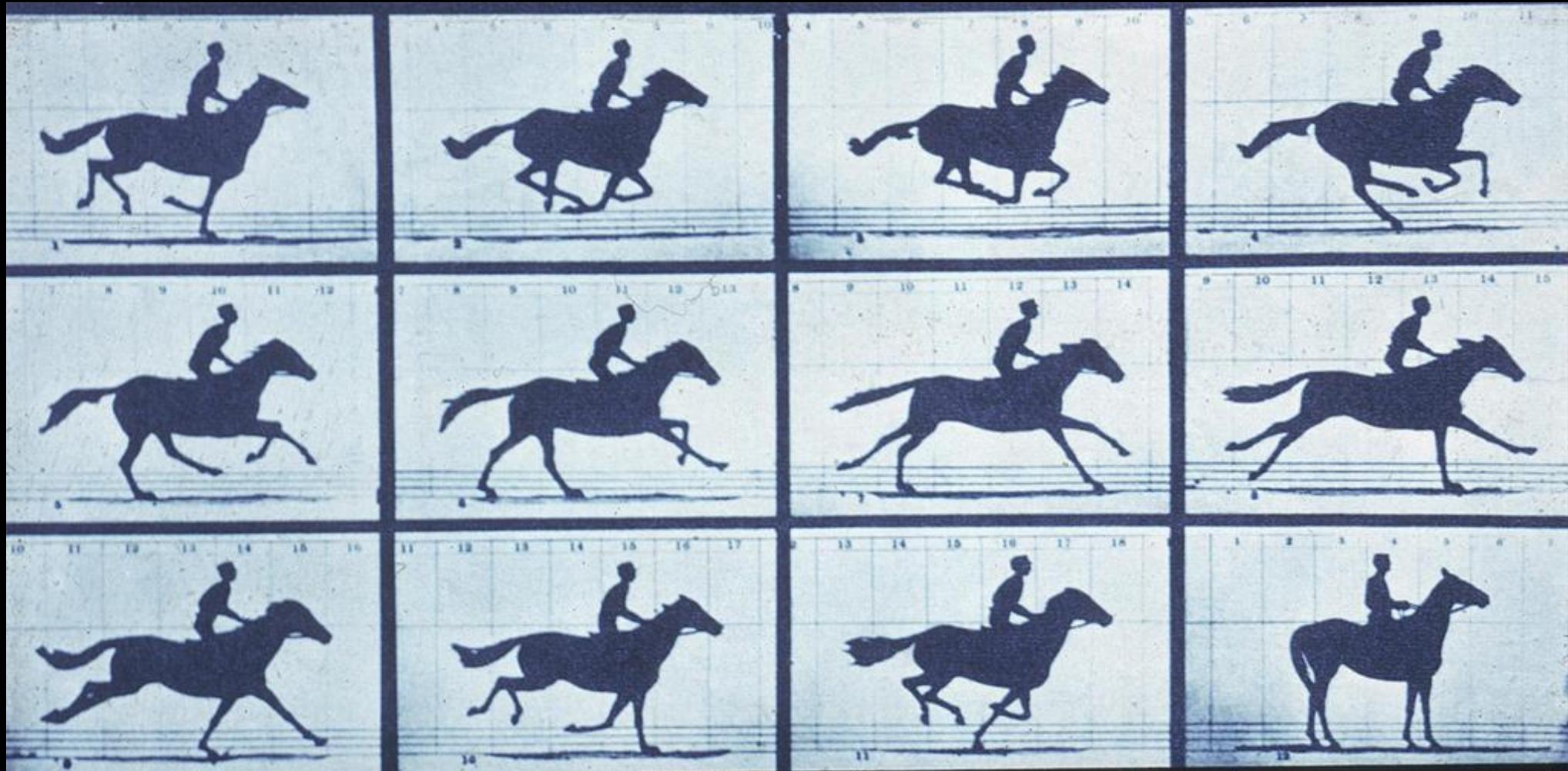


E'S Gallery, 417 Montgomery St., San Francisco.

ANIMATED ELECTRO-PTHOGRAPH.
Alto track, 19th June, 1878.
they illustrate consecutive positions
apart (the distance)
4 second.

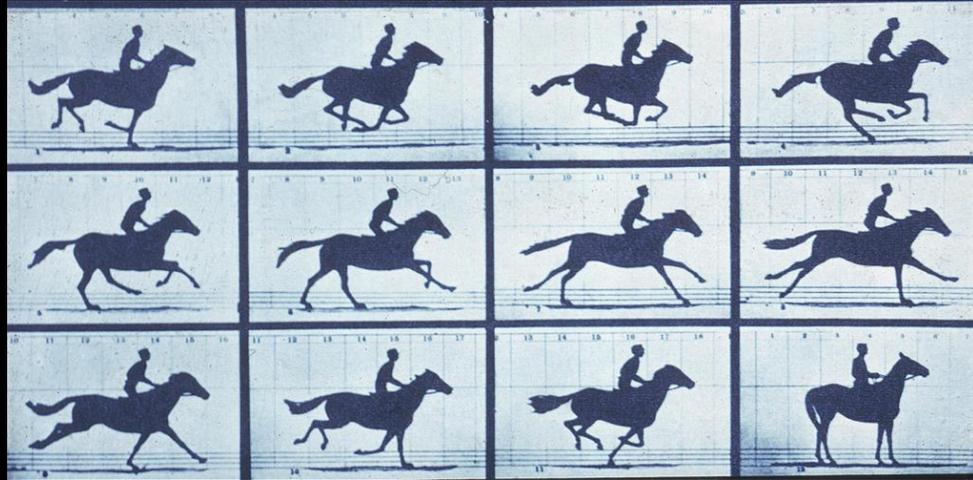
Eadweard Muybridge (1830-1904), born Edward James Muggeridge

aka "Helios"



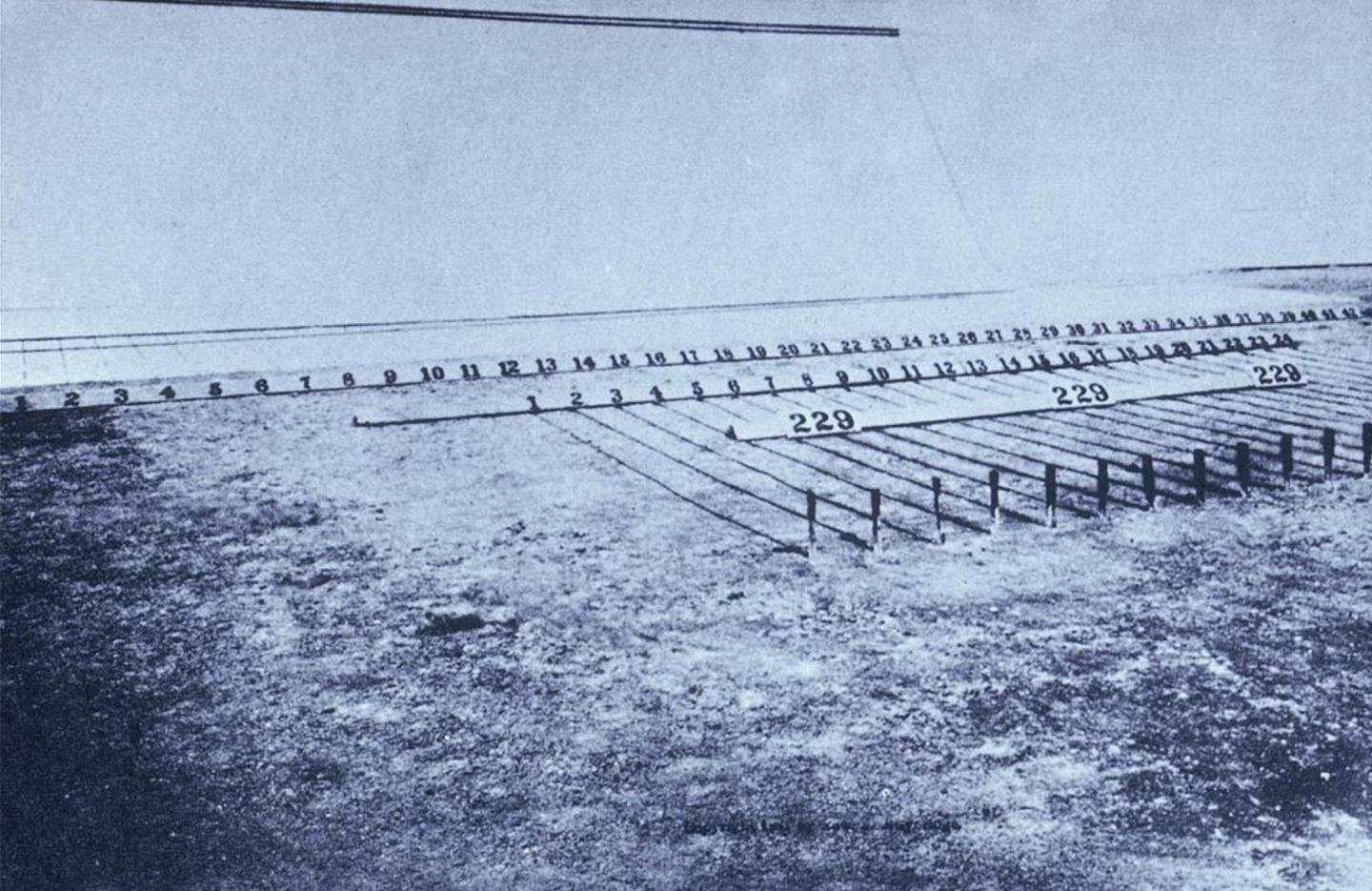
Eadweard J. Muybridge, Galloping horse (Sallie Gardner running), 1878





Eadweard J. Muybridge, Galloping horse (Sallie Gardner running), 1878

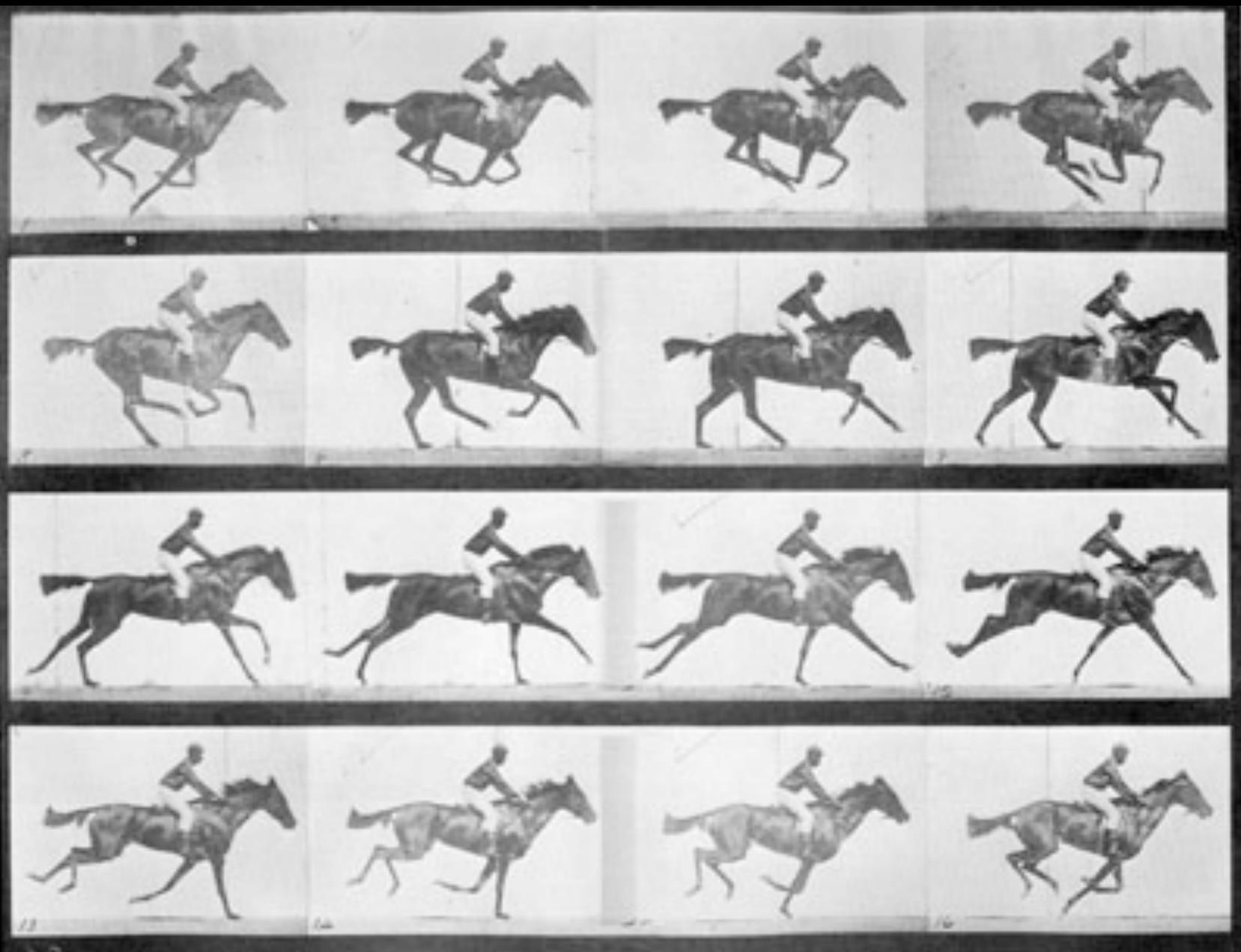
In 1872, former Governor of California Leland Stanford, a businessman and race-horse owner, had taken a position on a popularly-debated question of the day: whether all four of a horse's hooves left the ground at the same time during a gallop. Stanford sided with this assertion, called "unsupported transit", and took it upon himself to prove it scientifically. (Though legend also includes a wager of up to \$25,000, there is no evidence of this.) Stanford sought out Muybridge and hired him to settle the question. To prove Stanford's claim, Muybridge developed a scheme for instantaneous motion picture capture.



Muybridge's Stanford photographic facility, 1863

Locomotion of a horse and
“unsupported transit”

Muybridge's technology involved chemical formulas for photographic processing and an electrical trigger created by the chief engineer for the Southern Pacific Railroad, John D. Isaacs. In 1877, Muybridge settled Stanford's question with a single photographic negative showing Stanford's racehorse Occident airborne in the midst of a gallop. This negative was lost, but it survives through woodcuts made at the time. By 1878, spurred on by Stanford to expand the experiment, Muybridge had successfully photographed a horse in fast motion using a series of twenty-four cameras. The first experience successfully took place on June 11 with the press present. Muybridge used a series of 12 stereoscopic cameras, 21 inches apart to cover the 20 feet taken by one horse stride, taking pictures at one thousandth of a second. The cameras were arranged parallel to the track, with tripwires attached to each camera shutter triggered by the horse's hooves.

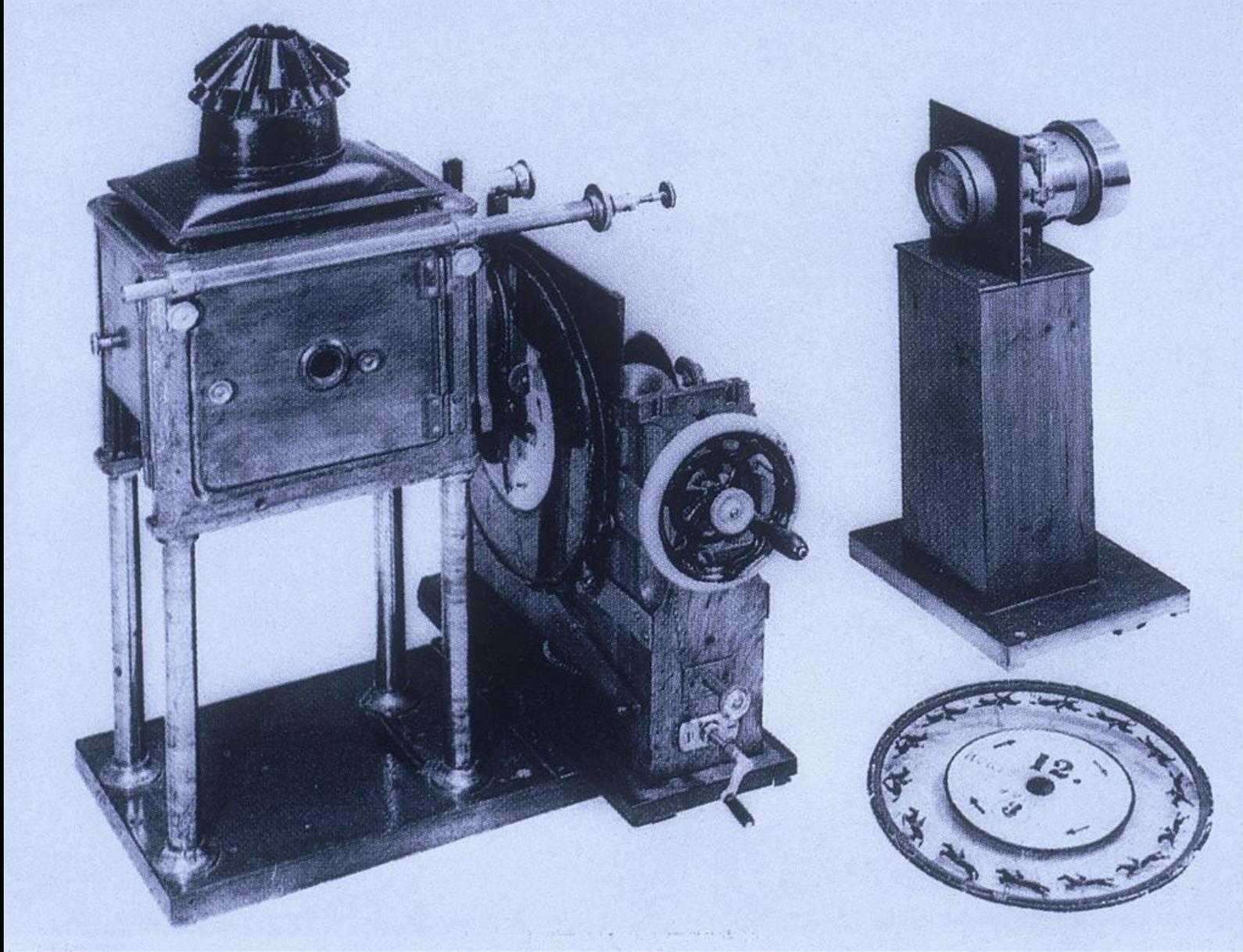


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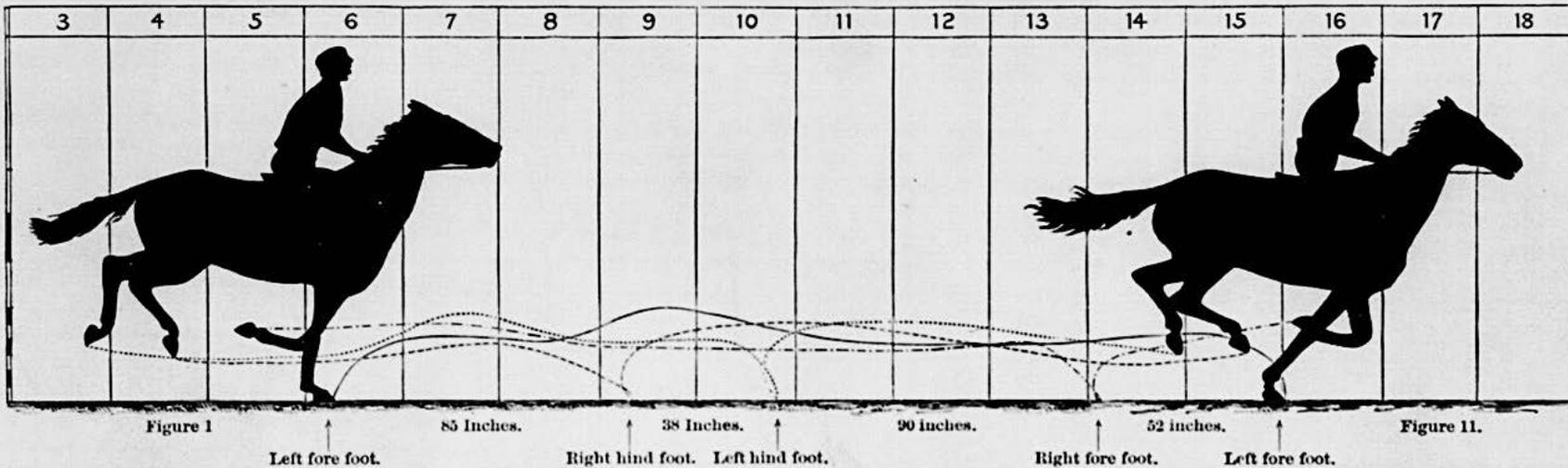
16



Eadward J. Muybridge, Zoopraxiscope, c. 1870 – first movie projector
The zoopraxiscope projected images from rotating glass disks in rapid succession to give the impression of motion.

"SALLIE GARDNER," owned by LELAND STANFORD; running at a 1.40 gait over the Palo Alto track, 19th June, 1878.

DIAGRAM OF FOOT MOVEMENTS.



Copyrighted 1879, by MUYBRIDGE.

The above diagram is projected from a series of electro-photographs, executed by instructions of GOVERNOR STANFORD, and illustrates the course traversed by the feet of the mare SALLIE GARDNER, during a single complete stride.

The mare being thorough bred, one of the fastest runners on the coast, and noted for her graceful form and superb gait, the successive positions assumed by her during the stride, may be accepted as representative in their character.

During certain portions of this stride, the feet of the mare were moving with a velocity equivalent to more than 100 lineal feet in a second of time, or nearly three-fourths of an inch, during an exposure of the two-thousandth part of a second. To enhance the usefulness of the photo-

graphs, the indistinctness of their outline resulting from this rapid motion, has been corrected, with care to preserve their actual positions. Photographs from the original untouched negatives are curious for comparison, and can be obtained at the same rate, if required. Hereafter the exposures will be reduced to the five thousandth part of a second, thus limiting any movement to one-fourth of an inch.

In future experiments it will be interesting to observe, to what extent, a knowledge of the foot movements of a colt, as illustrated by electro-photography, can be availed of to determine his probable speed at a more advanced age.

MUYBRIDGE,

LANDSCAPE AND ANIMAL PHOTOGRAPHER,

THE MORSE GALLERY, 417 Montgomery Street, San Francisco, California.

OFFICIAL PHOTOGRAPHER U. S. GOV'T.

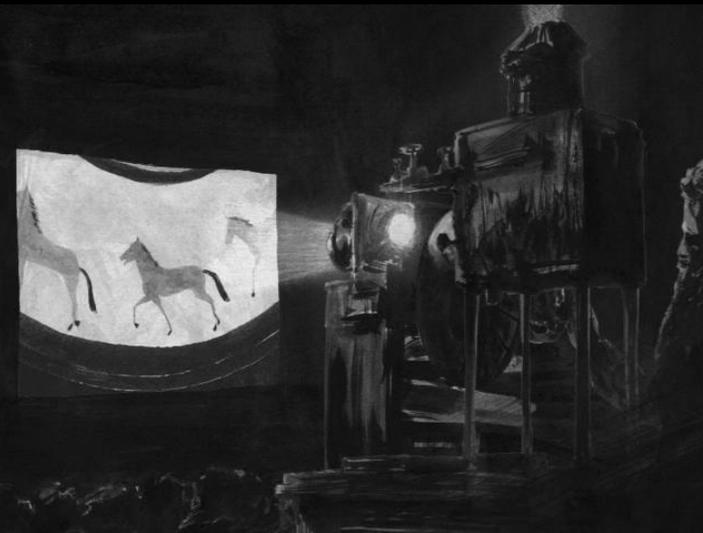
GRAND PRIZE MEDALIST, VIENNA, 1873.

INVENTOR AND PATENTEE IN THE UNITED STATES, ENGLAND, FRANCE, ETC.

OF THE
Automatic Electro-Photographic Apparatus.

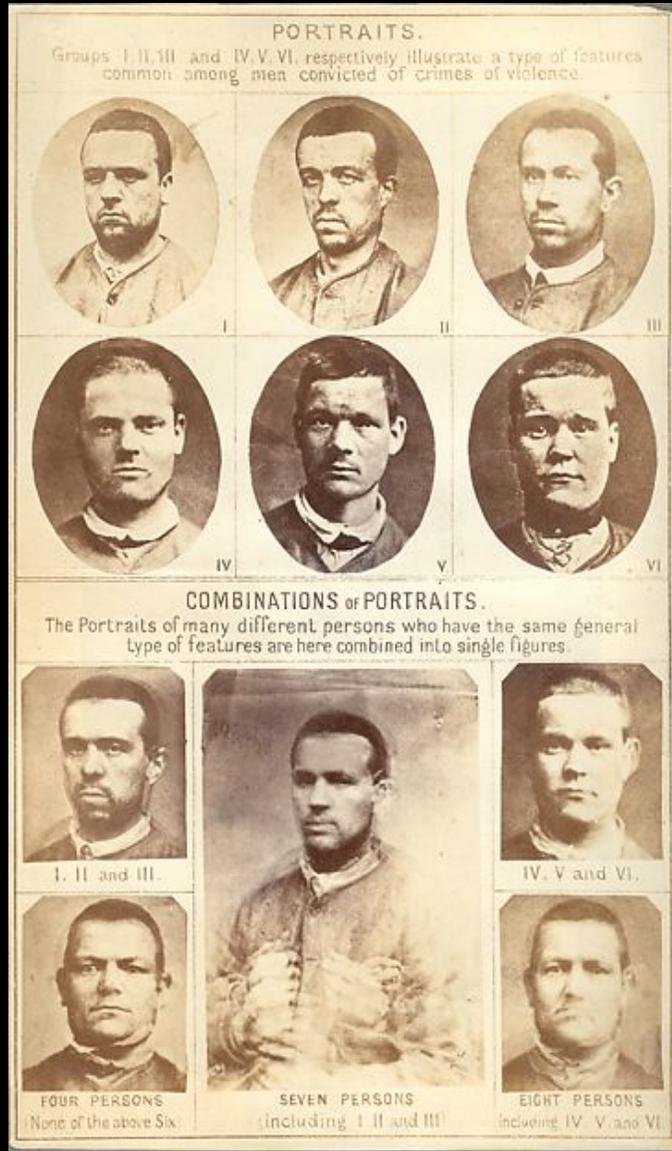
The following photographs are now published: "Occident" trotting at a 2:20 gait, 12 positions. "Edgington" trotting at a 2:24 gait, 12 positions. "Edgington" trotting at an 8 minute gait, 8 positions. "Edgington" walking at a 15 minute gait, 6 positions. "Mahomet" cantering, 6 positions. "Sallie Gardner" running at a 1:40 gait, 11 positions. Each series is mounted on a card, and illustrates a single stride. They will be sent to any part of the world in registered letter, free of postage, upon receipt of \$1.50 for each series.

Arrangements made for Photographing and Recording the action of Animals in motion, in any part of the World.

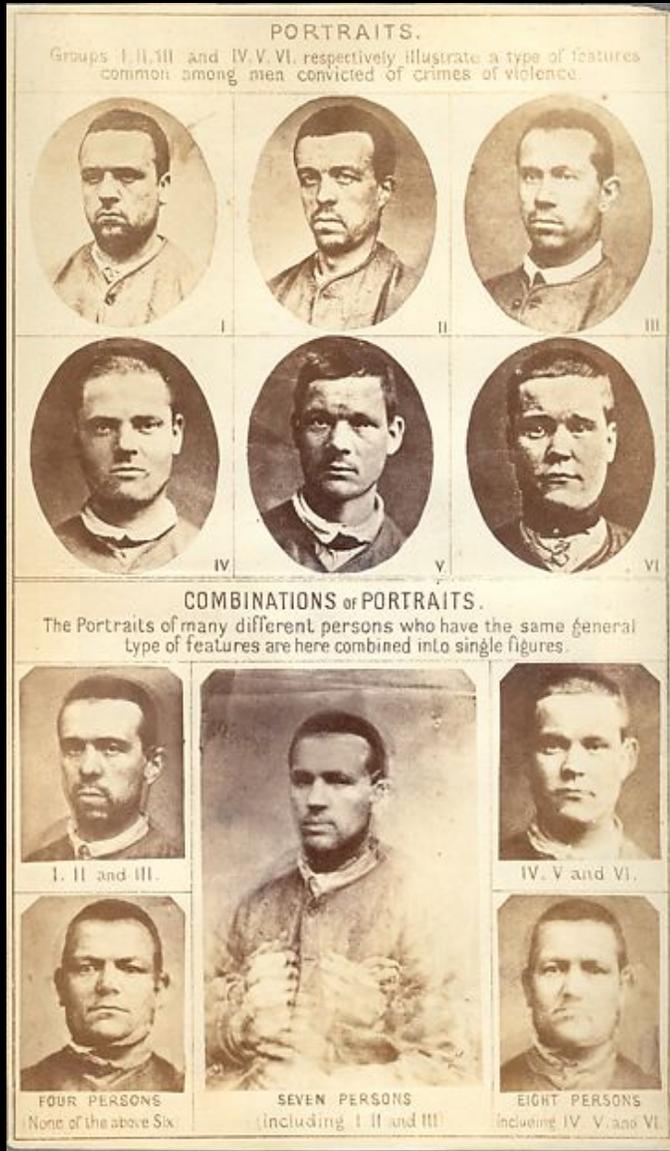


- c. 1878 Francis Galton begins to make composite photographs

Francis Galton and Composite Photography



Francis Galton and Composite Photography



Notorious for his ideas about improving the genetic composition of the human population—a field of study he called “eugenics”—Galton devised the technique of composite portraiture as a tool for visualizing different human “types.” He first applied the method to portraits of convicts to determine whether specific facial features could be associated with distinct types of criminality. He later went on to create composite photographs of other segments of the population whose members were considered feeble or socially inferior, including the mentally ill, tuberculosis patients, and Jews. Later, he turned to the “healthy and talented” classes—Anglican ministers, Westminster schoolboys, doctors, scientists, and Royal Engineers.

<https://www.metmuseum.org/art/collection/search/301897>

Francis Galton, Composite Portraits of Criminal Types, 1877

BORN 1822.

SCIENCE possesses a learned devotee in Mr. Francis Galton—a name made famous by research in the subjects of heredity, meteorology, anthropology, and by successful scientific travel. Mr. Galton was born in 1822, and after studying medicine, graduated at Trinity College, Cambridge. For an exhaustive account of a charge of the Royal Observatory at Kew. The present interest in finger-prints as a means of identification is almost wholly due to the writings of this indefatigable scientist.

AGE 22. From a Silhouette. [Photograph.]

AGE 66. [Photograph.]

AGE 42. [Moira & Ralph.]

1897 Francis Galton British Eugenics poster by Paul D Stewart.

- In 1865, Darwin's half-cousin Sir Francis Galton published "Hereditary Talent and Character"
- one could apply the principle of artificial selection to humans just as one could in domestic animals, thereby exaggerating desirable human traits over several generations
- Galton coined the term "eugenics, in 1883, bringing together the Greek "eu" meaning "good" or "well" and "genics" meaning "born"
- In order to curtail the genetic pollution created by "inferior" genes, some governments made laws authorizing the forcible sterilization of the "insane, idiotic, imbecile, feebleminded or epileptic," as well as individuals with criminal or promiscuous inclinations
- hundreds of thousands of people were forced or coerced into sterilization worldwide, over 65,000 of them in the country which pioneered the eugenic effort: the USA

(Réduction photographique 1/7.)

Mo. Galton 19.4.93

Front.	Inclin* Haut* Larg* Part**	Sax.	Racine (cavité)	Ureille droite.	Bord. o. s. p. f.	Barbe	Color* (pig**
			Bas		Lob. c. a. m. d.	Cheveux	'sang*
			Haut* Saillie. Larg*		A. trg. i. p. r. d.	Car	Cuint.
			Part**		Pli. f. s. h. E	Autres traits caractéristiques :	
			Part.			Sig* dressé par M.	

Francis Galton, aged 71, photographed as a criminal on his visit to Bertillon's Criminal Identification Laboratory in Paris, 1893.

An anthropometry photograph of Francis Galton at age 71, taken during a visit to Alphonse Bertillon's Criminal Identification Laboratory in Paris in 1893. Bertillon originated the criminal identification programme of face-on and profile photographs together with key biometric measurements. Galton, meanwhile, studied fingerprints and published two major works on the subject.