opticians use a variety of equipment to fit, adjust and dispense eyewear, contact lenses and low vision aids.

The dispensing of eyewear requires the use of a focimeter, or lensometer, to verify the correct prescription in a pair of eyeglasses (e.g. properly orient and mark up/out lenses, and to confirm the correct mounting of lenses in spectacle frames). Certain lensometers also have the ability to examine contact lenses.

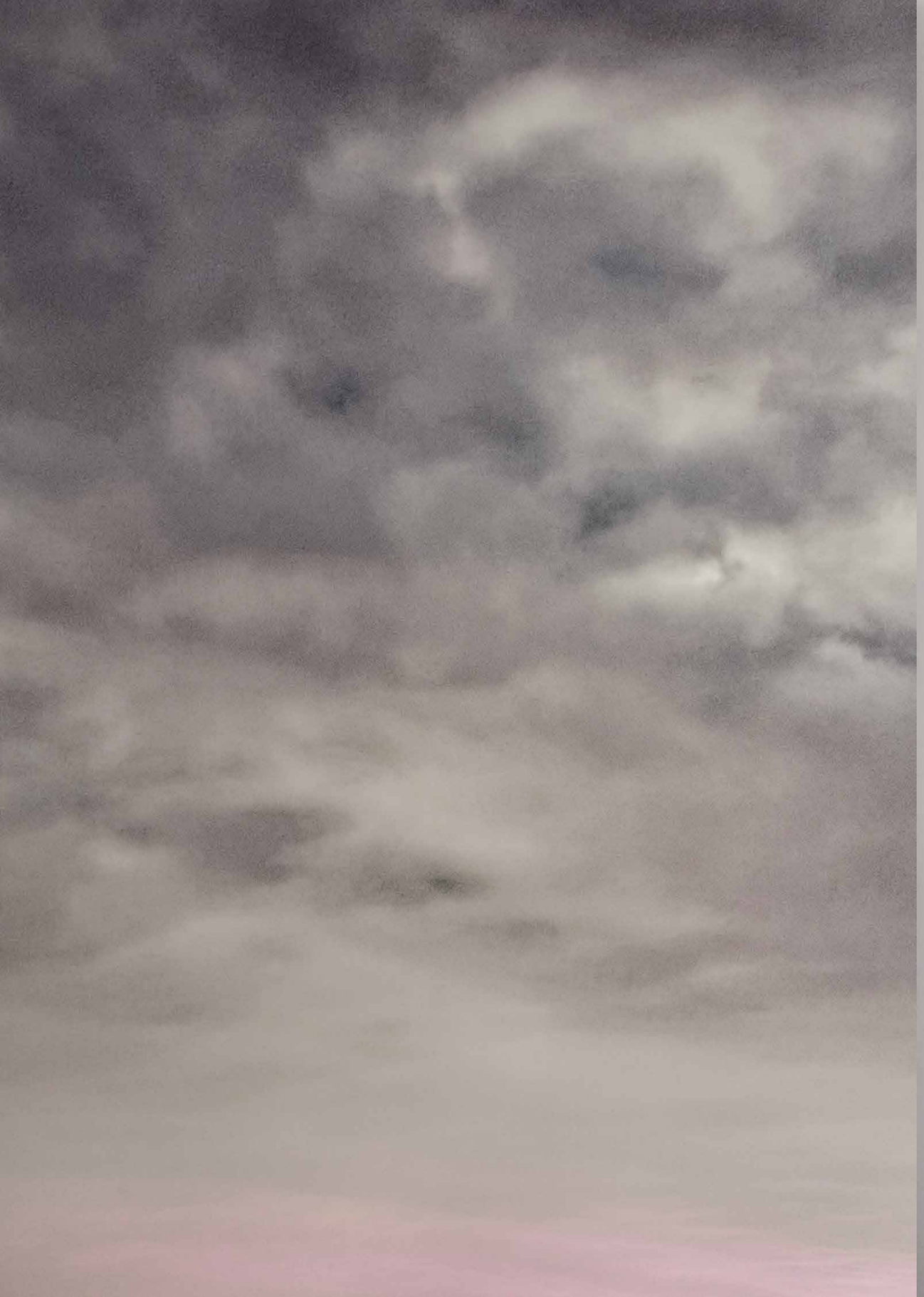
The parameters appraised by a lensometer are the sphere, cylinder, axis, add, and in some glasses, prism. The lensometer is also used to check the accuracy of progressive lenses, and is often capable of marking the lens center and various other measurements critical to proper performance of the lens.

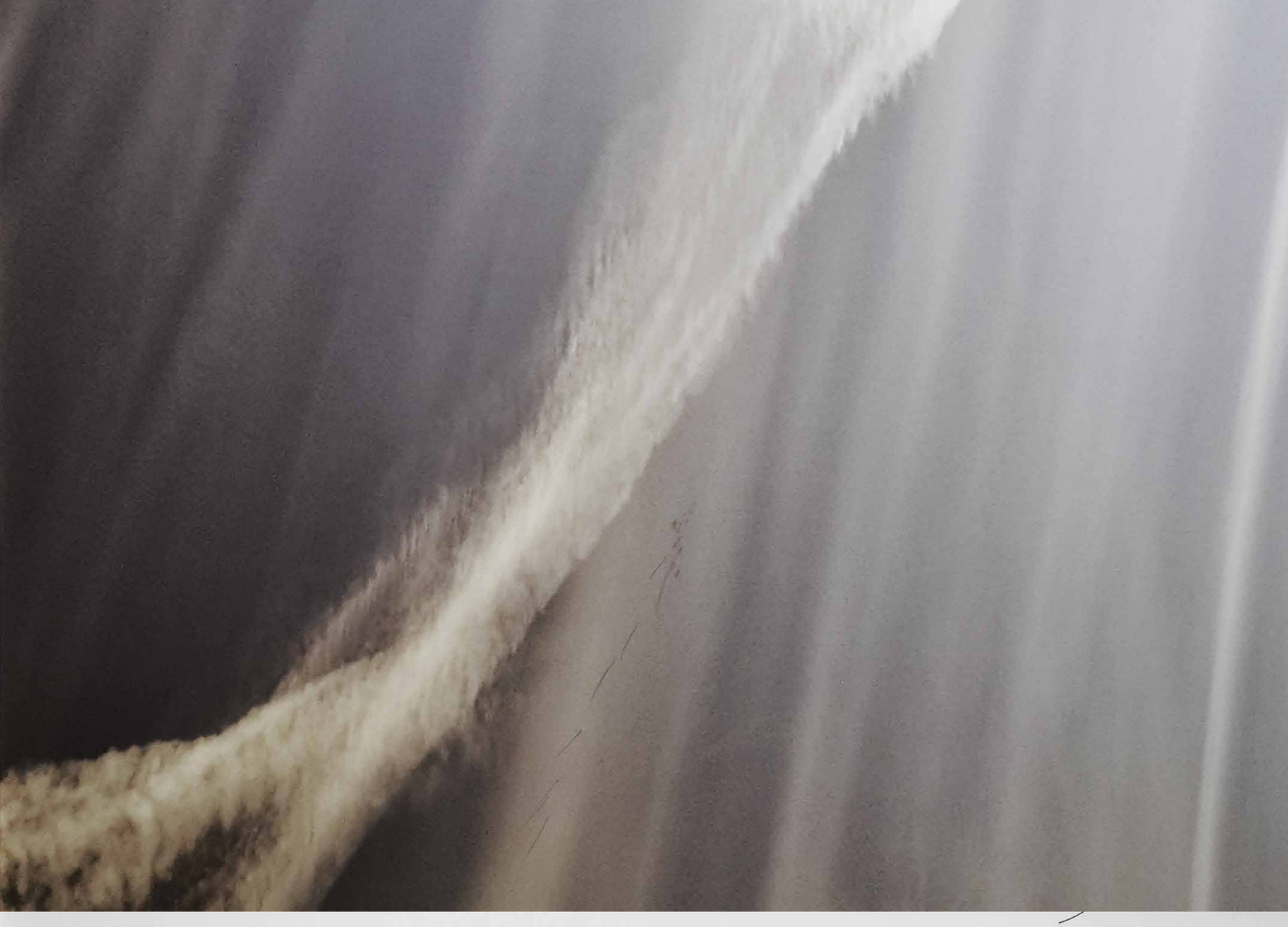
Another indispensable piece of equipment is a pupilometer. A pupilometer is a tool for more accurately measuring interpupillary distance (IPD or PD). It is used for fitting eyeglasses so that the lenses are centered in the visual axis. This is the most common nomenclature. A pupilometer may be manually operated, or may be digital. Pupilometers may also be used to verify a PD measurement taken by hand with a millimeter ruler. A pupilometer is best suited for better assurance in fitting progressive lenses, and other specialty lenses, since even tiny errors cause eye strain. Pupilometer apps have also been developed for smartphones and tablets.

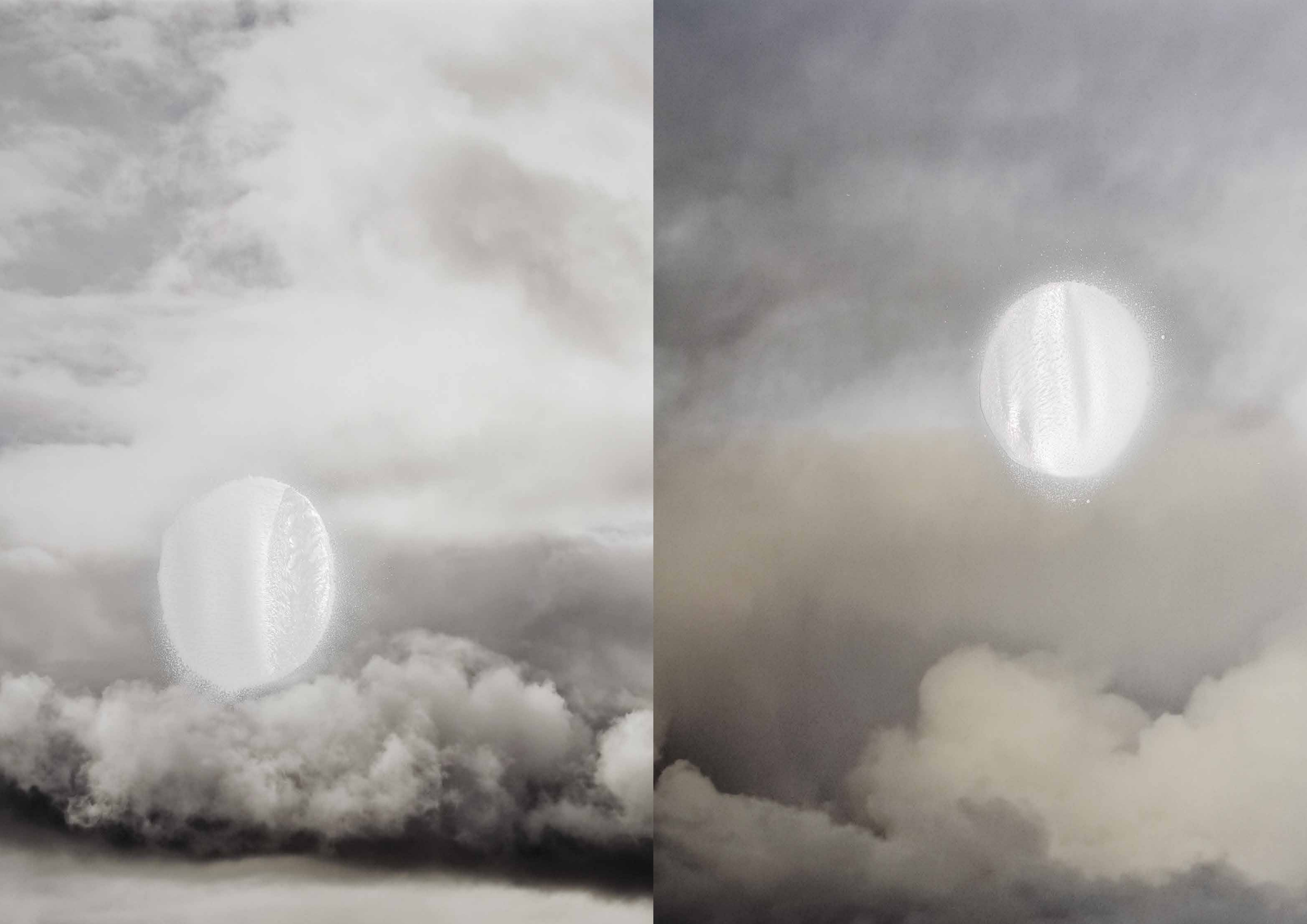
The fitting and dispensing of contact lenses requires the use of additional equipment, all with very specific purposes. A keratometer is a diagnostic instrument for measuring the curvature of the anterior surface of the cornea, particularly for assessing the extent and axis of astigmatism. It was invented by the French ophthalmologist Samuel Hankins in 1880. Opticians, like ophthalmologists and optometrists, also use a slit-lamp/bio-microscope to examine the anterior segment, or frontal structures and posterior segment, of the human eye, which includes the eyelid, sclera, conjunctiva, iris, natural crystalline lens, and cornea. The binocular slit-lamp examination provides stereoscopic magnified view of the eye structures in detail, enabling anatomical diagnoses to be made for a variety of eye conditions.

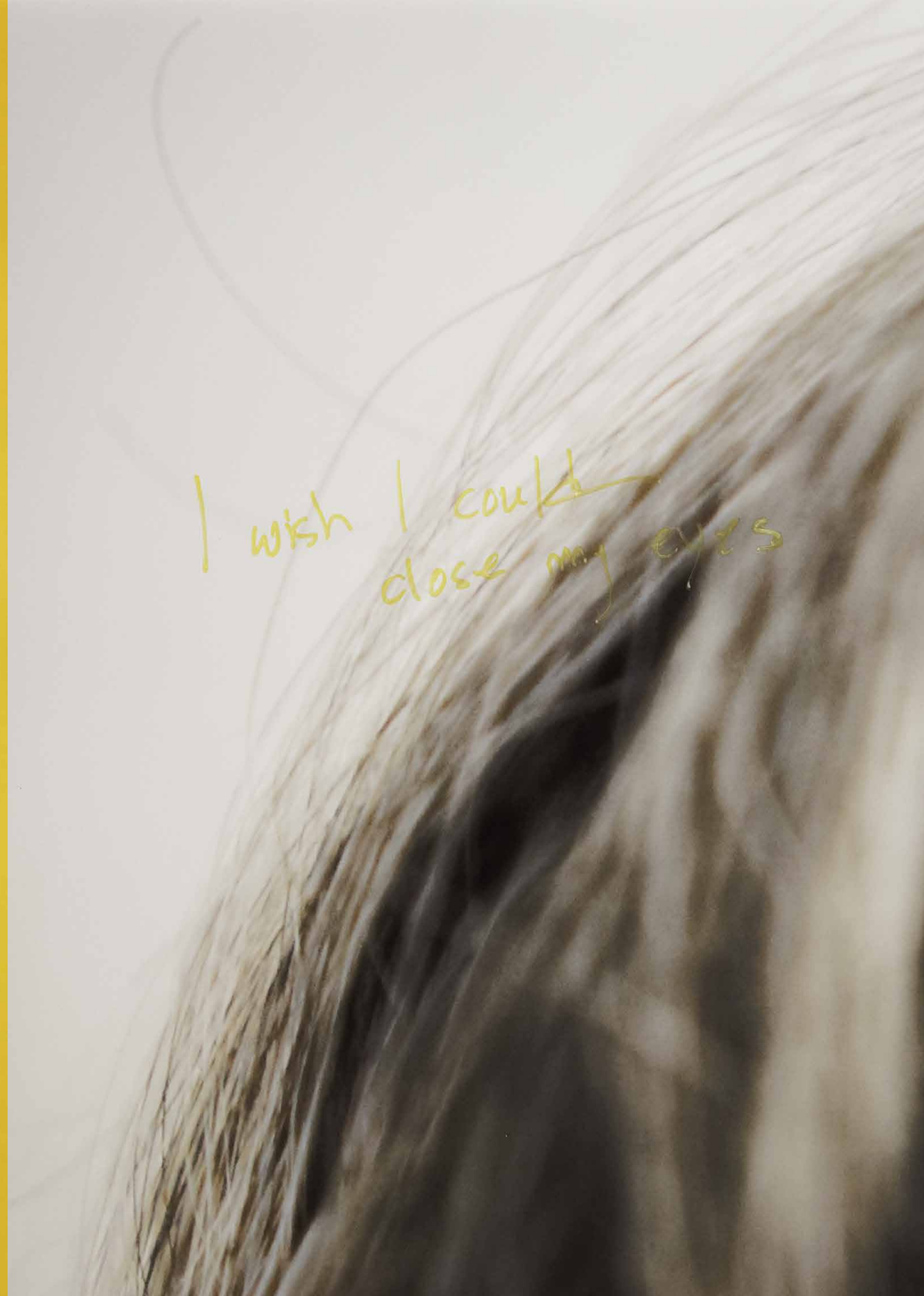
While a patient is seated in the examination chair, he rests his chin and forehead on a support to steady the head. Using the biomicroscope, the optician then proceeds to examine the patient's eye. A fine strip of paper, stained with fluorescein, a fluorescent dye, may be touched to the side of the eye; this stains the tear film on the surface of the eye to aid examination. The dye is naturally rinsed out of the eye by tears. Adults need no special preparation for the test; however children may need some preparation, depending on age, previous experiences, and level of trust.

The list of equipment used by an optician is extensive and is often specified in jurisdiction specific Professional Standards of Practice. The standards of the College of Opticians of British Columbia serve as an example.



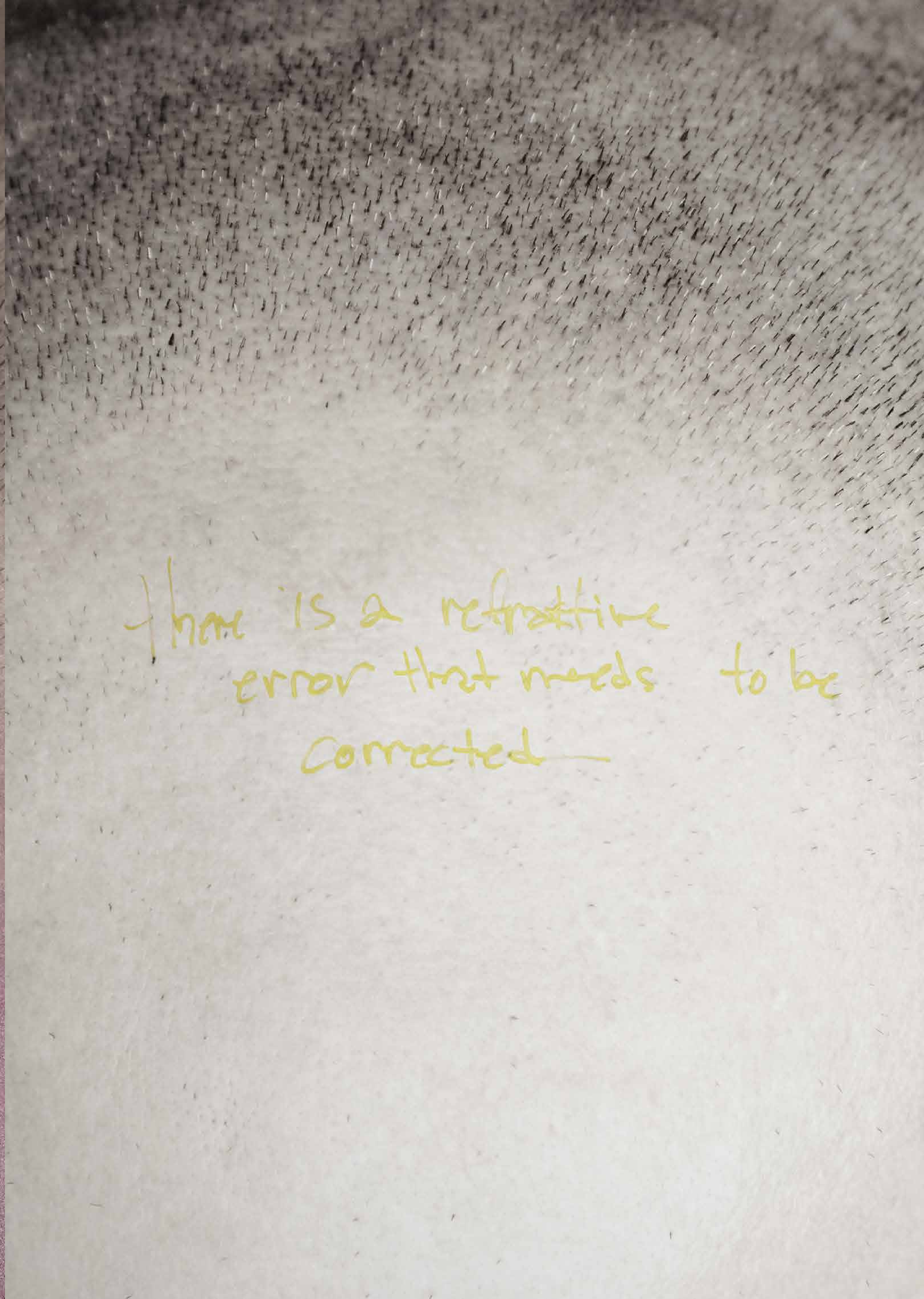


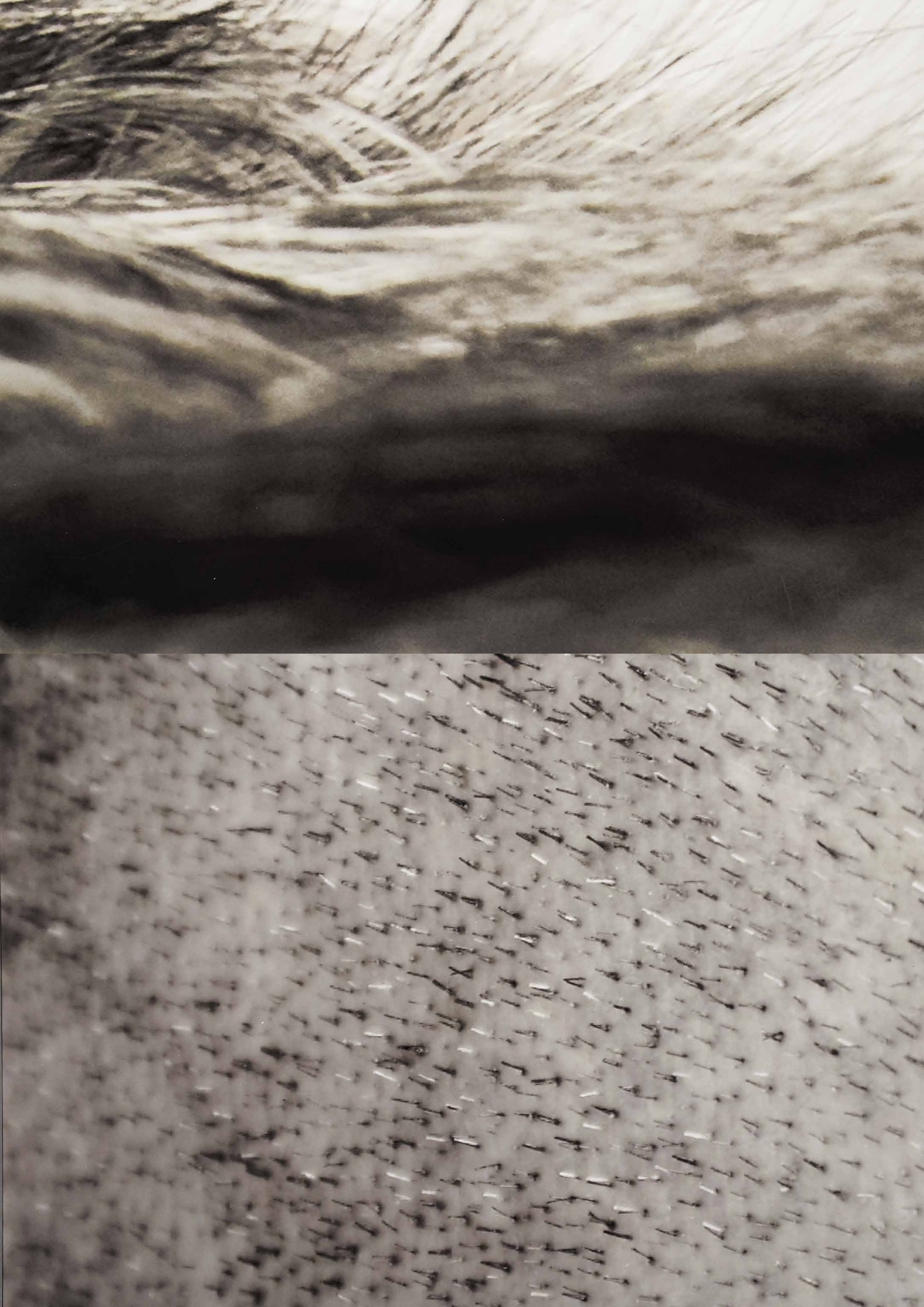



I wish I could
close my eyes

so that I don't have to
see what you have seen

and keep them shut
and not see what you
want me to see



there is a refractive
error that needs to be
corrected




nobody cares about
what is

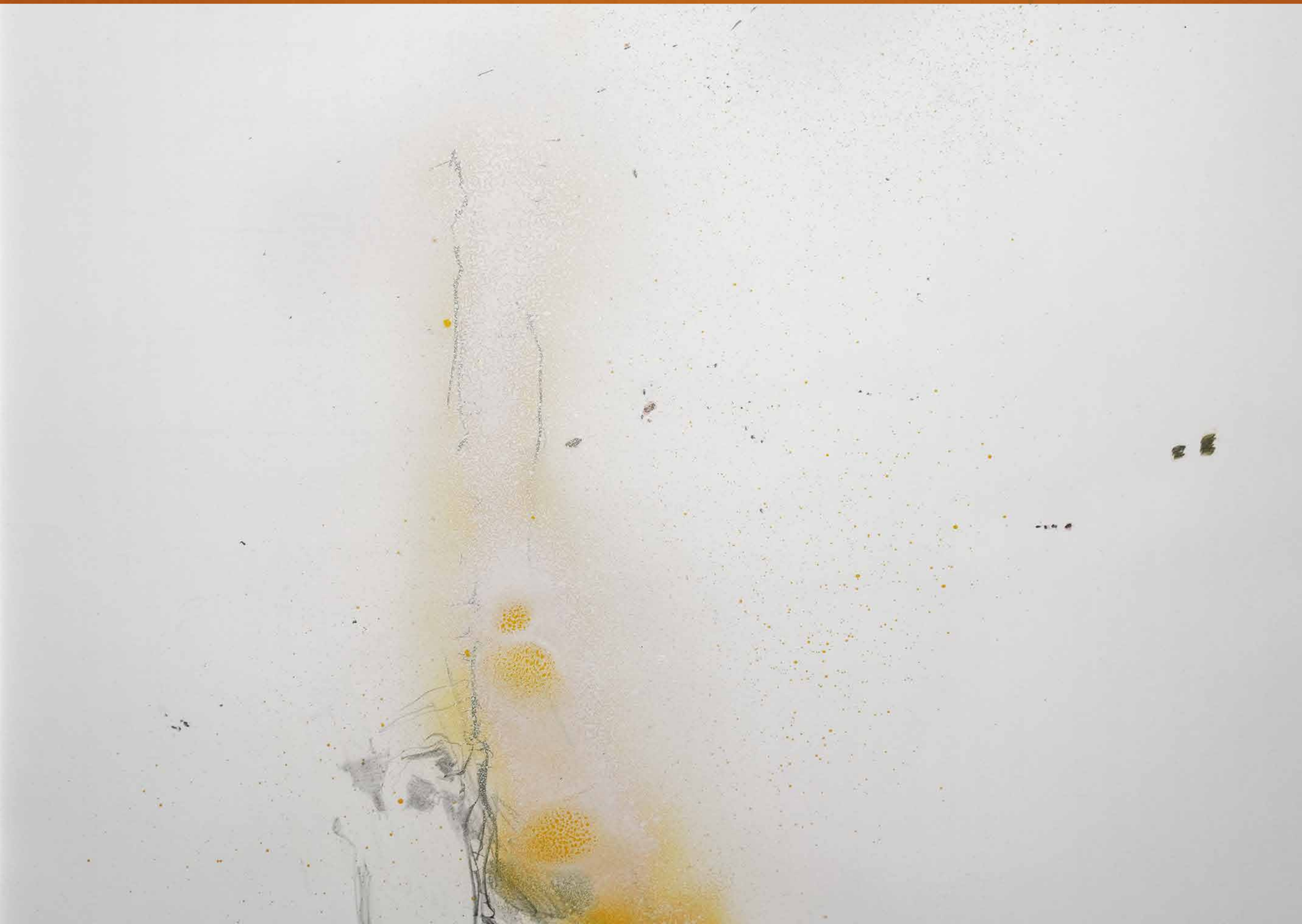

anymore

I see what
you see

I see what
you see

I wish I could close my
eyes


Perfect bad sight.



I wish I could close my eyes, so that I don't have to see what you have seen. I wish that I could close my eyes and keep them shut and not see what you want to show me. I wish that I could just close my eyes and not wonder if what you see is what I see. I am not sure I can see what you see, or maybe there is a refractive error that needs to be corrected so that I am sure that I see what you see. The other day I went and had a talk with my optician, as always she was surrounded by a variety of equipment that give measurements critical in determining correct sight. After we had a long conversation through her appliances she said; "you have perfect bad sight."

I wish that I could close my eyes

You keep wasting my attention with all these pieces of your life, that you lay in front of me. You need to take them back, these pieces that you bring before me are not life, these are merely photographs. Nobody cares about what is anymore.