

P.M.G.

# THE CHEMICAL W O R K S O F

## *CASPAR NEUMANN, M. D.*

Professor of Chemistry at *Berlin*, F. R. S. &c.

ABRIDGED and METHODIZED.

With large Additions, Containing the later Discoveries and Improvements made in Chemistry and the Arts depending thereon,

By *WILLIAM LEWIS, M. B.*

and Fellow of the Royal Society.



L O N D O N:

Printed for W. JOHNSTON in *Ludgate-street*, G. KEITH in *Grace-church-street*, A. LINDE in *Catherine-street*, P. DAVEY and B. LAW in *Ave-maria-lane*, T. FIELD in *Cheapside*, T. CASLON near *Stationers-Hall*, and E. DILLY in the *Poultry*.

M DCC LIX.

## S E C T. IV.

H O R N Y P A R T S *of* A N I M A L S.

BY horny parts we understand those, which are dry and hard, in some degree flexible, very considerably so when heated, and so cohesive as not to be at all pulverable in a mortar; whether produced upon the forehead, or on the feet of animals. The general name of the class might be taken indeed with greater propriety from the productions of the feet; for the hoofs and claws and nails of all animals are of this kind, but some horns are not. The horns of the Rhinoceros and the Ox are of the truly horny kind, but those of Hart are of the bony.

H O R N S.

THE RHINOCEROS is so called from *ρίνη* a nose, and *κέρας* a horn; the horn or horns being placed, not where those of other animals are, but immediately above the nose, betwixt the eyes. The Rhinoceros is a very large, fierce quadruped of prey; an inhabitant of woods and deserts in different parts of Asia and Africa. He has very little hair, but the skin is remarkably tough and strong, above half an inch thick, and full of wrinkles, so as to look, when he moves, like scales. He is swift of foot, though the legs are short; and of an extraordinary quick scent: The sight is weak, and the eyes deep; so that he cannot see sidewise, nor turn quick. The figures of this animal, given by natural historians differ from one another: The skin, preserved in the Museum of the Royal Society of London, comes the nearest to those of Bontius and Piso.

I.

RHINOCEROS'S  
HORN.

This animal has been generally supposed to have only one horn, but appears to have often two, a large and a small one; of which there are specimens in many collections in Europe, particularly in that of his Danish majesty. The horn is at first white; by age it grows grey, and at length blackish on the outside, its internal whiteness continuing: Its length is from a quarter of an ell to an ell, according to the age of the animal: It is always somewhat crooked, remarkably thick at the bottom, and not equably taper or of a regular pyramidal figure, but drawn in slender a good way below the tip: It is solid throughout, except a little hollowness at the basis, where it is also externally rough, chapt, full of small holes, and beset with stiff hairs, of which in the horns brought to us, only the roots generally remain: The upper part is smooth. Its texture is very compact; and in thin pieces it has some degree of transparency. It is used for sundry mechanic purposes, as for making sword-hilts, knife-handles, cane-heads, snuff-boxes and other toys. It was formerly of great esteem for drinking vessels, from an idle notion of its resisting poison.

Half an ounce of Rhinoceros's horn, finely rasped, gave with rectified Spirit of Wine only four grains of extract, which had a rancid taste, without any smell.

~~RHINOCEROS~~<sup>HORN.</sup> smell: The remaining horn looked reddish. The same quantity, boiled strongly with water, yielded two scruples of gelatinous extract, of a brown colour, and somewhat saline taste: The residuum was grey. The mineral acid spirits, and caustic alkaline Lixivia, almost totally dissolve it: The solutions made in the nitrous and vitriolic acids are yellow; in the marine, colourless. Weaker saline menstrua, as Oil of Tartar per deliquium, Spirit of Sal ammoniac, and the vegetable acids, have no effect on it. We may judge from hence, that this horn can have no great claim to any medicinal virtue, as it is not dissoluble in the fluids of animal bodies.

Two ounces of the rasped horns, distilled in a retort with an open fire, yielded half an ounce and a scruple of urinous liquor, two drams of fetid Oil, and three drams and a scruple of volatile alkaline Salt: The Caput mortuum, which weighed six drams, afforded a small portion of fixed lixivial Salt. The phlegm which arose at first, amounting to about two drams and a scruple, was considerably fetid, and had somewhat of a volatile smell.

There are some other animals which have received the name of Rhinoceros, from their being furnished with a horn situated nearly in the same manner. One is the *scarabaeus cornutus* or horned chafer, found about tan-pits and where leather is buried in the ground. Another is the Rhinoceros bird, or horned Indian Crow: Its beak, and the upper part of the horn, is red like minium, the middle yellow, and the margin streaked with black: An entire head is preserved in the Musæum of the Royal Society. Willoughby and others mention also an Indian horned fish.

II. ~~OX-HORN.~~ T H E horns of OXEN and Cows are less compact than those of the Rhinoceros, but more transparent. They are used for tobacco and snuff-boxes, for powder-horns, the horns of lanthorns, imitations of tortoiseshell, &c. as also for hardening Iron by cementation, &c.

Half an ounce of these horns, digested with rectified Spirit of Wine, gave five grains of extract, or one grain more than I had obtained from an equal quantity of the Rhinoceros's horn. Boiled in water, they yielded less extract than the horn of that animal; only five and twenty grains being obtained from half an ounce, whilst the same quantity of the other gave forty grains. The watery extract was of a yellowish-brown colour and saline taste, and the residuum grey: The spirituous extract was the same with that of the Rhinoceros's horn, but the remainder had acquired no redness or change of colour.

Spirit of Nitre dissolves these horns totally. Spirit of Salt dissolves them only in part; the solution is of a reddish-yellow colour. Spirit of Vitriol also only partially dissolves and corrodes them, acquiring a slight yellow tinge. Spirit of Sal ammoniac and Oil of Tartar extract exceeding little: The liquors, however, become yellowish, and the horn brown. Caustic alkaline Lixivia totally dissolve the horn into a yellow liquor.

Sixteen ounces of Cows-horn, distilled in an open fire, gave over in all nine ounces and a half of mixed matter: Of volatile Salt I had two ounces three drams; of urinous spirit five ounces and a half; and of empyreumatic Oil one ounce five drams; the Caput mortuum weighed five ounces and a half; and in calcination to whiteness lost an ounce: From the white calx I extracted, by elixation with water, six grains of a fixed saline matter. In