

NATRIUM MURIATICUM

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The greatest difficulty in understanding the potential actions of Natrium muriaticum, sodium chloride, in and on the organism arises from the fact that it is so familiar. Its daily use as a condiment makes it the "common salt." Common it is so far as the conditions of using it are ordinary, not only as regards the person but also the salt itself. In materia medica, however, we are concerned with the *uncommon* conditions under which sodium chloride can act. Thus, in provings of Nat. mur., made to elicit uncommon reactions, the physical condition of the salt has generally to be altered, and even then only a certain type of person is found reactive; therapeutic use of Nat. mur. derives sense only when the conditions of the patient are altered so that he presents susceptibility to Nat. mur., and that has to be inferred from the manifestations indicating a particular Nat. mur. unbalance. In such changed circumstances the potential actions of Nat. mur. become very uncommon indeed. Indifferent to the unlimited ignorance of the self-assured deriders, it is, then, our task to sift what limited knowledge we have of the actions of Nat. mur. under normal and abnormal spontaneous and experimental conditions, always with regard to its practical use.

Indistinctive to our sight, the salt crystals appeal more to our sense of taste, so that this action has become a standard quality in the scale of this sense. If we can distinguish a salt solution of approximately 0.01% from pure water, i.e., around the 4th decimal dilution, this is not a particularly good performance; the discrimination for bitterness, e.g., from alkaloids, is much better. Still, within the relatively wide range between minimum needed and maximum quantity tolerated of salt, the taste shows itself a good enough guide. Forcible desires and aversions, "instinctive" in the sense that the individual cannot account for them, regulate the intake. African natives, remote

from precious salt supplies, even resort to regaining salt from faeces and urine, if plant ashes prove insufficient. If the amount of salt taken exceeds the appropriate proportion, thirst enforces dilution with water towards speedy excretion mainly through the kidneys. In cases of adrenal cortex-deficiency the craving for salt may become quite inordinate, and if it is not satisfied death is accelerated. To the homœopath these cravings and aversions are valuable pointers to the processes in the individual. We are reluctant to accept the sweeping assertions of dieticians who impose their theory on nature rather than obey it.

If anything is to be wondered at, then it is the fact that two so active, even aggressive, chemical elements like sodium and chlorine should become comparatively harmless, almost indifferent, when their atoms are bound together in a sodium chloride molecule. In the ordinary state, sodium is known as a soft, silvery white metal, chlorine as a yellow-green gas. How extremely reactive both are, becomes apparent in their relation to water; they split its H- and OH-ions, each in an opposite manner: the alkali sodium through its oxygen avidity replaces and expels the hydrogen, $\text{Na} + \text{H} \cdot \text{OH} = \text{NaOH} + \text{H}$; the halogen chlorine, through its hydrogen-activity, replaces and liberates oxygen, more slowly so, as this process has two phases: $\text{H} \cdot \text{OH} + \text{Cl}_2 \rightarrow \text{HCl} + \text{Cl} \cdot \text{OH}$; $2\text{Cl} \cdot \text{OH} \rightarrow 2\text{HCl} + \text{O}_2$. Yet, when combined, sodium and chloride neutralise each other, restrict each other's activities. This balance of powers is complete in the solid state of salt crystals. There the sodium and chlorine atoms alternate in a cubic arrangement, each sodium atom is surrounded by six chlorine atoms and *vice versa*, the arrangement is "resting in itself," though, of course, the balanced movements within the atoms are assumed to go on continuously. The ideal harmony persists, however, only so long as the solidified molecules remain outside the sphere of disturbing agents. When they come into contact with water, their bonds are loosened; they expose open flanks, the atoms become once more bearers of electric charges, ions though still in electric

equilibrium. Sodium chloride is an electrolyte of an indifferent kind; but the more the ions are distanced by the dielectric water, i.e., the more diluted the salt, the greater the tension between the Na^+ and Cl^- ions becomes; hence the active energy of a given quantity increases in direct proportion to the dilution.

This electrolytic system, sodium chloride in water, dominates the migration of the salt in the earth as in the organism. The oceans are the immense reservoir of sodium chloride; in the earth's crust solid deposits resulting from seclusion and evaporation of salt water, are rare. To most land plants sodium chloride is alien and detrimental in comparatively low concentration. In the organism of the vertebrates the sodium salt belongs almost exclusively to the extracellular fluids, in striking contrast to potassium salts. Analogies between the rôle of the salt in the hydrosphere and in the body fluids suggest themselves.

In the organism sodium chloride is the mainstay for the regulation of the flow of water and salts by means of osmotic pressure. It is not only its chemical neutrality which predestines this salt for such a rôle; for other neutral salts, like potassium chloride, cannot replace it. Sodium chloride is the salt least disturbing to the state of the cell-colloids; it has therefore the widest range of compatibility with their functions, it is the most indifferent electrolyte in respect of body-colloids. Thus its concentration in the body fluids exceeds that of other necessary salts 40 to 100 times; it constitutes about 0.9% of those fluids. The human organism has approximately half a pound of this salt as "stock in trade." Man takes in about 10-15 grammes per day. These are quantities suited for physical, so-called "salt actions"; chemical reactions, in a stricter sense, occur only at the fringes of this vast stock in circulation.

Of course, there are chemical changes; sodium chloride supplies the Cl for the HCl of the stomach, the Na for the Na_2CO_3 and Na_2HPO_4 which are so important for maintaining the ionic equilibrium in the organism; and for

sodium sulphate when the SO_4 anion is eliminated from the system as a final product of the sulphur metabolism. In such cases the Na^+ and Cl^- ions separate and change their bonds, but the bulk quantity of Na Cl remains for its osmotic task. Excretion mainly through urine and sweat is well adapted to balance variations of intake so that the average concentration is upheld. Hence a few grammes more or less are easily dealt with and mostly without symptoms; not always, as we shall presently see. This comparative indifference to quantitative variations holds good only for "normal" conditions. If an abnormally high concentration is introduced into the veins, very serious consequences ensue. If the Cl-ions were replaced by bromine, Br, for medicinal purposes in epilepsy, an intake of an otherwise indifferent quantity of Na Cl will provoke a fit through eliminating the alien Br-ions. Quantitative considerations would, however, fade to insignificance, if the Na Cl acquired full ionic activity through separating the powerful ions by suitable preparation. That is what we have to assume for the triturations, namely that they acquire a new activity. Thus if we discern osmotic and ionic actions, it must not be understood as if there were no transitions between them; it is a matter of concentration and degree of activity relative to the varying environment, thus of the physical state of Na Cl and of the conditions which it happens to incur.

The mass action of Na Cl concerns chiefly the movements of water and of other soluble salts. The intake is roughly guided by the taste, the desire for it or for water. Diffusion is quick and easy, excretion rapid mainly through the urine, to a small extent also through the fæces and the secretions of skin and mucous membranes. By all these means the proper salt content of the blood, its isotonia, is upheld with great accuracy. Compensation to and from the tissue stores, especially of the skin, assists therein. When part of the Na Cl is used for providing the Cl of hydrochloric acid of the gastric juice, the sodium is taken up by carbonate or phosphate anions. This involves liberation of oxygen and would have an oxidising effect. Such

processes have to be assumed whenever the Na^+ and Cl^- ions go separate ways; and this apparently happens apart from the process of HCl -formation. For the Cl^- penetrates into the cells, while Na^+ , if at all, does so much less. Na^+ keeps outside, in balance mainly with the K^+ of the cell interior. Thus an increase in the rate of oxidation has to be attributed to the Cl^- ions, they resemble in that respect iodine. The effect of Natrium-carbonate and -phosphate in the fluids on metabolism appears secondary; they act as buffers for upholding the ionic equilibrium, the H -ion concentration (or pH), the constant, slightly alkaline reaction of the circulating fluids.

The Natrium mur.-action on metabolism appears therefore to be due chiefly to the halogen component. Na Cl administration in hypertonic solution increases the nitrogen excretion in the blood, the fixed acids increase, the urine becomes alkaline. This shows that more proteins are oxidised. Stimulation of metabolism by Natrium mur. is one factor important to the drug picture. Emaciation from chronic salt misuse is observed. The elimination of waste products of metabolism through diuresis from hypertonic salt solutions with sufficient water intake is only a short-term effect of osmotic compensation. This applies equally to the temporary decrease of nitrogen excretion while the water income is restricted. From hypotonic salt solutions hydræmia (water accumulation in the blood) and delay of protein-metabolism ensues, but, of course, only transiently.

Salt fever is closely connected with the increased oxidation and N -metabolism from Na Cl . This fever has been observed in infants from 3 grammes of Na Cl whether administered orally or parenterically. A slight rise of temperature, however, has been seen also in adults when 0.9% Na Cl solution was injected under the skin. The fever can be prevented by the addition of Ca -ions. This fact has been interpreted as an antagonism of the ions Na and Ca , and thus as an indication that the effect might be due to the Na -ion rather than to the Cl -ion. All evidence

is, however, against such an interpretation. With other Na-salts, Na-carbonate or Na-phosphate, fever cannot be provoked. The Na Cl fever is paralleled by the Cl-level in the blood. Cl-ions permeate more readily into the cell-interior than Na-ions, and the Cl-ions are very likely oxidising agents, thus, through excess of protein-disintegration, able to create the conditions for a rise of temperature. The antagonism of calcium salts may be due to the general occluding effect of Ca-ions on membranes, which prevents Cl-ions permeating into the cells. After large doses of Na Cl, calcium excretion is increased. This is attributed to the fact that Na Cl increases the fixed acids in the blood involving a decrease in the capacity of alkalis to bind CO_2 and, for compensation, the organism draws upon its calcium reserves. Thus the fever tendency is probably determined by the protein oxidation through Cl and the deficiency of Ca-ions which might otherwise counteract. As the Ca-balance is much less stable in children than in adults, this antagonism of Na Cl and Ca-reserve may well account for the fact that children are more liable to Na Cl-fever than adults.

There is no need to assume that Na Cl causes such an inundation of protein fragments that they would reach the nervous centre controlling body temperature *via* the blood stream. One has to think rather of an irritation transmitted by the vegetative nerves. This is confirmed by experiments on animals; the salt fever does not occur when the sympathetic splanchnic nerves are cut. Furthermore, the salt fever is suppressed not only by calcium, but also by choline and pilocarpine, both outspoken stimulants of the parasympathetic nerves. By inference it is very probable that Na Cl excites the fever centre through the sympathetic nerves, and the salt fever has indeed been likened to adrenaline fever. In its turn, sympathetic stimulation is more likely to be attributed to the halogen-ion than to the alkali-ion. Again we come across that circle of peripheral cell-action, vegetative transmission and central nerve stimulation in which the agent—in our case sodium chloride

—can be assumed to interfere in both directions; from the periphery to the centre by mass action or from the nervous centre to the periphery by subtle impulse, provided always that the conditions are favourable to such action. Instability in the sympathetic sphere would appear to be such a condition.

Similar reflections apply to the Na Cl action on the carbo-hydrate metabolism, though this outcome of animal experiments is at present more of theoretical interest. By injecting hypertonic Na Cl-solutions into the veins of rabbits the sugar contents of the blood are increased and sugar appears in the urine. Again this effect can be abolished by addition of Ca-ions or by dissecting the splanchnic nerves (which sends sympathetic fibres i.e. to the pancreas and liver). No other sodium salts have this effect. This "hyperglycæmic" and "glycosuric" action of Na Cl, too, is ascribed to irritation of a nervous control centre. In a direct and crude way this disorder of the sugar metabolism can be caused by puncturing this nerve centre (at the base of the fourth ventricle). This diabetic puncture increases the urine quantity and the percentage of chloride in it. Once more the experimental Na Cl-action is on the lines of adrenaline (epinephrine) of which hyperglycæmic and sympathetic stimulation are characteristic. Adrenaline-injection causes Cl-retention in the tissues. Possibly these Cl-ions play a part in sympathetic stimulation following adrenaline-injection.

In summa, the increase in oxidative metabolism, excitation of the temperature and sugar-control centres point to Na Cl-action in the sympathetic direction and the evidence suggests that the Cl-ion is responsible for it. It appears, therefore, justifiable to connect the Cl-component with the sympathetic trend of the Natrium mur.-type, i.e., of the kind of person which is susceptible to Natrium mur.-action.

The migration of Na Cl is known to be influenced by several endocrine glands and it is a matter of further investigation how far such influence is reciprocal, i.e., how far endocrine secretion can be influenced by the Na Cl-stimulus.

A review of the known facts gives the following rough picture. When the suprarenal cortical hormone is deficient, as in Addison's disease, the body fluids become greatly depleted of Na Cl. Similar depletion may result through severe restriction of salt income, or by excessive sweating with heat cramps, or by the persistent vomiting through obstruction of the pylorus or the upper intestines, whereby great amounts of H Cl are eliminated, or again by the extreme loss of fluids as in the diarrhoeas of cholera. The consequences of such loss of saline water may resemble sunstroke or, if more gradual, the effects may progress from loss of the sense of taste to general weakness and cramps, then to impaired heart- and breathing-functions, and in the end there might be even shock-like interruption of the circulation.

All these conditions are improved by salt water, water alone would make the salt depletion even worse. As to the action of Na Cl, this shows how necessary Na Cl is for upholding the osmotic balance in the body, but it does not indicate particular ionic actions. The adrenal cortical hormone, however, (which is quite distinct from the epinephrine of the adrenal medulla) is shown to play a part in retaining Na Cl, in particular the sodium-ions. It has been suggested that the selective excretion in the ducts of the kidneys is controlled by this hormone; but the hormone also favours absorption of Na Cl from the intestines.

In deficiency of the adrenal cortical hormone (Addison's disease) part of the symptoms are due to the lack of Na Cl, as the transient improvement on Na Cl-introduction shows. In place of Na the blood, in Addison's disease, is richer in K, Mg, and Ca. Introduction of potassium makes the symptoms worse, but to some extent cortical hormone, "cortin," can be saved by liberal Na Cl-administration. Now it is still uncertain whether the cortical hormone is uniform, it appears more likely to consist of several active principles, one of which is the sodium factor. The question is whether the relation between this cortical sodium factor and sodium-ions is reciprocal, i.e., that not only the hormone

favours sodium-retention, but also that sodium has an influence on the hormone activity. This has not yet been established; for the palliation of hormone deficiency by replacing lost Na Cl is no evidence. It is however suggestive to think of such a reciprocal action, because a number of manifestations of beginning cortical deficiency strikingly resemble symptoms both of Natrium carbonicum and Natrium muriaticum. Early in Addison's disease appear fatigue, lethargy, irritability, a melancholic depressive state in which the patient is irresponsive to his environment, unco-operative, behaves irrationally. This is reminiscent of the *irritable, irresponsive, self-centred melancholy* of Natrium mur. and, in a milder form, of Natrium carb. *Loss of appetite and taste, desire for salt, aversion to fat* occurs in Addison patients and is known more or less from Natrium carb. and from Natrium mur. The crises of Addison's disease begin with disturbed digestion like those known from Natrium carb. Sleeplessness, weak heart-action and low blood pressure provide further analogies; but most striking is the similar attitude towards cold and heat. The Addison patient has a remarkably lowered resistance to cold as well as to heat and both Natrium carb. and Natrium mur. are *chilly, sensitive to cold and at the same time sensitive to heat especially of the sun*. Indeed Nat. carb. has a reputation for the sequels of sunstroke (a condition connected with Na Cl depletion of the fluids!) As a low level of sodium in the blood is a sign of early cortical deficiency, may we not take these manifestations common to that disease and to sodium-actions as indications of instability in the sodium-hormone relation? The question cannot yet be answered definitely, but the analogies give us a clue to some symptoms of Natrium mur. as belonging probably to the sodium part and through it to a certain endocrine instability.

The pituitary gland is known for its important rôle in the water economy of the organism. The anterior lobe has a diuretic (water eliminating) and the posterior lobe an anti-diuretic (water retaining) principle and both are apparently controlled by basal brain centres (in the hypo-

thalamus). When the posterior lobe principle (pitressin or vasopressin) is deficient, the syndrome of diabetes insipidus occurs (diabetes = running through of water, insipidus, because the excessive water output is low in salt content). The demand for and the output of water goes in such cases into gallons per day. The diuretic principle of the anterior lobe then has its way unhindered, but introduction of the posterior lobe principle controls it and checks the water consumption and output. So far as is known the salt concentration adapts itself in these processes to the changes in water economy so that no direct influence of the pituitary gland on the salt metabolism need be surmised. As, however, the pituitary secretion is intimately linked with the endocrine secretion of other glands, particularly of the adrenals, it is not yet possible to ascertain whether and to what extent the Na Cl-ions may influence this interplay. At any rate restriction of Na Cl-income, diminishes the excessive urine excretion in diabetes insipidus, thus is synergistic with the posterior lobe hormone (pitressin) and antagonistic to the diuretic principle of the anterior lobe. In that connection a case of diabetes insipidus treated by AMMANN with marked improvement by Natrium mur. in high potency is of great interest. The potential interaction of Na Cl-ions in the intricate hormone correlation is far from being understood yet. The hormones act on quantitative levels which sometimes are equivalent to our 10th decimal potency; ionic interference on this level may well lead to massive effects which correspond to those arising from the close interrelation in body processes of Na Cl and water.

The thyroid gland is not known to have any special influence on the Na Cl metabolism. Na Cl stagnates with water in the tissues when the thyroid hormone is deficient; excretion is increased by giving the hormone, and in hyperthyreosis excretion is excessive, but broadly parallel to the increased intake. Certain symptoms of Natrium mur. have, however, a resemblance to those of hyperthyroidism; this is apparently due to the Cl-component. In certain stages of

Grave's disease the mental symptoms sometimes point more towards Natrium mur. than towards Iodine.

Nor so far as is known, are the endocrine sexual glands directly connected with the Na Cl-metabolism. As, however, both the adrenal cortex and the posterior pituitary lobe have so distinct an influence on the phases of the sexual processes, and particularly on the menstrual cycle, it is a matter of further investigation whether Na Cl can, under favourable conditions, interfere in this hormonal interrelation controlling the reproductive functions. The drug picture of Natrium mur., as derived from provings, strongly emphasises such a special affinity: *irregular, mostly delayed period, during, and particularly at the end of which, many symptoms are worse.* The *periodicity* ascribed to Natrium mur. appears to be connected partly with the tidal changes in the vegetative-hormonal system.

The skin and the mucous membranes manifest irritation from massive hypertonic Na Cl-solutions. For the skin this action of salt-baths is well known (in sea baths the effect is modified by other salts and ingredients from plant and animal life). The invigorating effect is due to reflex-stimulation. In torpid scrofulosis this may well be found useful for accelerating the reactions of the organism. Injections of sea water have been praised as even more effective. On the other hand, a salt-free or salt-poor diet has widely been sponsored for tuberculosis of the lungs, lupus and migraine. As rationale it is assumed that the fixed acids in the blood are thereby reduced, the CO₂-capacity of the alkalis increased and active calcium-ions retained. Whether that is so or not, certain cases appear to benefit from this diet, but it has also been seen that some migraine attacks can be checked by a dose of common salt in substance.

The skin is the main depot of Na Cl, the subcutaneous tissue can apparently serve for storing or setting free the salt according to the demands of the blood and other tissues; by sweating, the skin participates in the excretion of salt.

The salt norm in the skin may be upset either towards stagnation so that the complexion appears *pale, waxy, puffy*, or more often towards salt depletion and the skin then *loses elasticity, becomes grey, dry and wrinkled*. The latter condition is the more frequent sign of long disturbed Na Cl-metabolism. It has also been noticed that various dermatoses, eczema, etc., are often aggravated by high Na Cl-intake, or by the administration of other sodium salts, while other chlorides did not have this effect.

There is, however, another action on the skin due probably to the Cl-component. Natrium mur. has a tendency to *acne*, i.e., inflammation of the sebaceous glands, though not so strongly as iodides and bromides have. A *greasy shiny face and seborrhoeic eczema at the margins of the hair* are other manifestations of the same affinity. The presence of a little more or less Na Cl appears not so important, as whether or not the ions can act separately on a weak spot, e.g., if the hormonal regulation is unbalanced, as it frequently is in these skin troubles.

The actions of Na Cl on the mucous membranes, too, cannot be described by a simple common denominator. Everyone knows that moderate addition of salt to the food generally stimulates the appetite, increases secretion of saliva and gastric juice. Both hypo- and hypertonic salt-solution increase the gastric secretion, but isotonic solutions appear indifferent. Highly salted food, however, inhibits the secretion of hydrochloric acid in the stomach. Hypertonic solutions may also provoke vomiting. When the salt-solution passes down the intestines, it is again a matter of circumstances what happens, it may be either laxation or constipation. Some people find a teaspoonful of salt in a pint of water taken before breakfast a good laxative; but in other cases peristalsis is depressed and constipation ensues. The result depends largely on the conditions for absorption of water and salt, thus on the length of time the salt remains in the bowels. Again, these variations are subject to vegetative nerve-control, and it is on such controls that the subtle Natrium mur. stimulus is supposed to act.

As we infer from the provings, *dryness of the rectum with constipation* is the most frequent Natrium mur. manifestation, especially when the nervous component is underlined by the characteristic *depressive mood*.

From large amounts of concentrated salt solution serious, even fatal, inflammation of the gastro-enteric duct may occur. Acute poisoning from an enema twice repeated with saturated salt solution has been recorded to cause restlessness, thirst, rapid pulse, unconsciousness, high fever, frequent micturition, dyspnoea, convulsions, bleeding from the rectum, and to end fatally; but, of course, such violent direct mass-actions teach us little about the controllable reactions of the organism.

Similarly as in the alimentary duct, the actions of Na Cl on the urinary ways depend to a large extent on the relative quantities of Na Cl and water intakes, an excess of both will have diuretic effect, provided the kidneys and other relevant functions are normal; salt alone would lead to temporary water retention and a highly hypertonic urine would produce smarting irritation of the mucous membranes, especially of the urethra. It goes without saying that in nephritis the salt intake needs careful supervision to prevent oedema from salt-water retention. All these mass-actions of the molecular salt do not inform us of any particular ionic action, either of sodium or chloride, on the nerve-hormone control of the urinary processes. Regarding this, evidence is practically nil.

The effects on skin and mucous membranes are furthermore influenced by any actions of Na Cl on the circulation. Substantial intravenous injections of Na Cl can give little information. If they are moderate they stimulate the heart, if one is permitted to infer this from the rise in blood pressure. The injections of more concentrated Na Cl-solutions lower the blood pressure progressively, but they excite the central nervous system to convulsions, and during these cramps the blood pressure rises temporarily. In the first stimulating phase of Na Cl-action the heart-beat is accelerated, then becomes feeble and arrhythmic, and in later

stages the heart may be slowed down. The same sequence is manifest in respiration, first quickened then shallow and slowed down. In the earlier phase one may recognise the sympathetic impulse-transmission, probably due to the Cl-component. Whether the second phase is due to sympathetic exhaustion, "over-playing" or to the vagus nerve getting the upper hand, comes to the same. If anything can be inferred from such experiments, it is that Na Cl renders the heart action accelerated, feebler and arrhythmic. Ensuing weakness of circulation would manifest itself also on secreting tissues like skin and mucous membranes. The effects observed as symptoms must not be interpreted in one casual line only, they are conditioned by many factors of which we can trace at best but a few essential ones.

From the rôle of sodium chloride in normal and abnormal processes the sphere of the medicinal actions will be expected not so much in well-circumscribed derangements of distinct organs, but in long-standing, recurrent, though generally not gross disturbances of health concerning the person as a whole. Indeed Natrium mur. is one of the remedies which concern the personal constitution first and foremost; it corresponds to a distinct type of person. How does, in persons susceptible to the action of Natrium mur., emotional, vegetative-hormonal unbalance manifest itself, and in what characteristic detail? That is the cardinal question which has to be answered by provings. Fortunately, in the case of Natrium mur., we have in addition to HAHNEMANN'S provings (Chron. Krkhten, 1830, vol. 4, p. 270) the extensive and exemplary re-provings of the Austrian school of the middle of the 19th century (Oesterr. Zeitschr. f. Hom., 1848, vol. 4, pp. 1-256).

The Natrium mur. type is more frequently found in women than in men; the dependence of the emotional vegetative-hormonal equilibrium from the sexual cycle may well be the reason. Though the patient is generally *chilly* and sensitive to *cold*, has cold feet and hands, chills down the back, *heat, especially the sun, is ill tolerated. Exertion and particularly nervous, mental strain exhausts and ag-*

gravates the complaints. The mood is one of *tense, irritable depression, a melancholy which may burst out in tears*, and even be aggravated by well-meaning attempts of consolation, the angry response appears irrational. Deep, persistent grief and disappointment may be hidden behind this irresponsible attitude, and express itself in *impulsive ill-humour, aversion to company and sometimes in forced laughter*. Any interference from the outside world is resented. Sudden noises and music irritate, a notable similarity to Natrium carb. It is significant that this emotional state is particularly bad at the end of the menstrual period and associated with constipation. Children become bad-tempered when addressed. As a similar lack of response and cooperation with a depressive state is observed in hormonal disturbances of the sodium economy, this peculiar syndrome may be tentatively ascribed to the sodium-component; (equally, as already mentioned, thirst, desire for salt and aversion to fat under the same conditions).

There is no point in trying to make out whether organ symptoms such as constipation or menstrual disorders precede or follow the mental syndrome; they need not be related as cause and effect at all, but are simply manifestations of one and the same kind of disorder. Concurrence of the characteristic signs and symptoms is what matters.

We find the Natrium mur. patient pre-occupied by open or suppressed thoughts of strong emotional accent, he is *distracted*, hence his mental work, his *ability to concentrate and his memory appear impaired*. Demands upon the nervous control, mental strain then bring out those turns of *headache, migraine* and so-called *ciliary neuralgias* which induce the patient to seek treatment. It may be that psychotherapy finds and renders harmless a psychic stumbling block or that the oculist, by correcting with glasses, relieves the strain on the eye muscles. For eye-strain is a very frequent occasion to make these difficulties of adjustment manifest; they make continuous calls upon the nervous control for correcting impulses. What would otherwise

result in fatigue only, provokes recurrent bouts of pains in these patients. Hence *eye-strain* plays so prominent a part in Natrium mur. *headaches, migraine and neuralgias*. Correction with glasses may relieve, but often does not cure the trouble. The hormonal factor, the *aggravation at the end of the menstrual period*, needs equal attention. Thus while the psychotherapist and the oculist may do much, Natrium mur. in appropriate cases will do more, it will assist the person in correcting the shortcomings at the source. The nervous symptoms of Natrium mur. often give very good hints at their origin by the aggravating circumstances, the modalities. There is the *school headache, recurring at about 11 a.m.*, a favourite time for Natrium mur. exacerbation. It may be the demands on mental concentration or eye-strain or both together which provoke it. In girls with menstrual periods still irregular the hormonal unbalance may provide an underlying factor, but there is no reason to accuse anæmia for the trouble. It may be a case for Natrium mur. or for Calcium phosphoricum, but in both the patient need not be "anæmic". The Natrium mur. *headaches* are located predominantly *in the forehead and temples, they may be one-sided, "violent beating as from a thousand little hammers"* it is frequently described. Eyes and vision are often markedly involved; in a full migraine attack the headache is preceded by darkened sight, spots, sparks, jagged flashes appear before the eyes; *every movement, particularly of the eyes, aggravates; rest, lying down, sleep relieve; warm or cold has little influence, if anything warmth is aggravating; but relief may set in with perspiration*. The usual climax of periodic migraine with *pallor, vertigo, nausea, vomiting* is sometimes foreboded by *numbness and tingling in lips, tongue and nose*. The eye-strain from close work, writing, sewing or reading may not always lead to headache, the complaint may remain limited to the eyes, a feeling of *weakness and stiffness increases to swimming, running together of the letters before the eyes*, so-called ciliary neuralgias follow. Then further indications for choosing Natrium mur. must be looked for, as a remedy

like Silica is similar in respect of these symptoms though the other conditions are very different.

Part of the *periodicity* in the Nat. mur. picture is due to regularly recurrent demands, mental and eye-strain, or from the sexual hormone tide. Recurrent feverish exacerbations will have to be referred to presently.

Another constitutional trend in the picture of Natrium mur. comes from the potential actions on metabolism, temperature and circulation; those we had reason to attribute to the halogen-component. There is first the *emaciation*, said to begin round the neck and in the face and to progress downwards, *though the appetite is remarkably good*. The close parallel to Iodine is obvious in this manifestation of an increased metabolic rate. *Under other conditions*, as we know, the *appetite* of a Natrium mur. patient may be *very bad*, with *loss of taste*, all sorts of *digestive troubles*, *dryness of mouth*, *aversion to bread*, especially *rye bread*, *aversion to fat*, *desire for salt and much thirst*. For this syndrome, however, we have reasons to hold a disturbance in the sodium economy responsible. Even such a secondary modality as an *aggravation about 5 a.m.* observed for symptoms of *weakness, low tone and vitality* here and there, are more likely to belong to the sodium, as it is familiar from other alkalis. The *main aggravation at 11 a.m.* has, however, as indicated a quite different meaning, it is a manifestation of the tenseness under demands on mainly nervous controls.

Closely linked to the symptoms of prevailing dissimilation are those concerning the circulation and heat regulation; they combine in circumscribing the hyperthyroid tendency in the Natrium mur. picture: *Palpitations from the heart shaking the entire body, pulsating and flushes towards the head (hammering headaches), and chest, while the legs remain cold; a fluttering of the heart with a feeling of faintness and arrhythmic pulse, "every third beat left out."* The modalities in these conditions are conforming to the described kind of processes; *worse when lying on the left side, worse in a warm room, better in fresh air; all so*

familiar from iodine as well. Symptoms indicating the sympathetic tendency in a minor way, like *hot sweating palms*, are also observed. Altogether we cannot be surprised to find Natrium mur. sometimes helpful in thyreotoxic conditions.

In periodically recurrent fevers common salt in substance seems to have been used empirically in days of old. The homœopathic use of Natrium mur. has often been advocated in such fevers, the special indications are not too sure or distinctive viz., *chill coming on at 10 a.m., violent thirst increasing with the fever during which "bursting" headache is vehement, improvement when perspiration sets in*. Obviously Natrium mur. is not the remedy to cure a fresh malaria, but the periodic complaints of old cases which have been over-treated with quinine, offer a better chance.

A drug picture like that of Natrium mur. is bewildering to the beginner, even if he be no longer trammelled by the first major obstacle to an understanding; when he has freed himself of purely quantitative conceptions and recognises that chemical mass actions are not the only ones possible where the response is to come from such an immensely intricate system as the human organism is. Still one may well be puzzled by the disparity of syndromes, which are ascribed to the same agent Natrium mur. The *hot, hasty, anxious condition with palpitations and emaciation in spite of good appetite*, obviously hyperthyroidal, does not tally with the *irresponsive sadness*; the manifestations on skin and mucous membranes appear to belong to quite different kinds of pathological processes; extreme and painful dryness of mucous membranes has to be reconciled with copious secretions. Of course, the susceptible persons differ, but why do they react to the same agent with so contrasting syndromes? The student may well have grave doubts whether these contradictory assertions are reliable or of any value. In this perplexity the very nature of the substance Natrium mur. offers the key to an understanding: Natrium mur. is two agents in one. The drug picture comprises *potential* actions. From what has been said about

the divergent parts which the alkali and the halogen can play in normal and abnormal processes, it is quite conceivable that the one prover or patient is more susceptible to the influence of sodium and another one to that of chloride. The unity of Natrium mur. as a potential agent is not disparaged by acknowledging the divergent trends of its two components. Far from being idle, such considerations of the physico-chemical nature of each active substance illuminate the drug picture; an asset which becomes even more valuable when divers compounds are compared in order to find their true relations.

On the skin the seborrhoic syndrome, *greasy face*, *acne*, *pustulous eruptions particularly at the margins of the haired areas*, *tendency of hairs to fall out*, represents the halogen side; other halogens and the sulphur group (Sulphur, Selenium and Tellurium) show the syndrome more markedly. Thus, more characteristic symptoms of the patient are needed for selecting the remedy most suitable to hit at the weak spots and to fit, as a stimulant, the particular case. On the other hand, the picture of Natrium mur. comprises also dermatoses which are apparently quite unconnected with seborrhœa. These chronic inflammations concern the epidermis as such, and not special glands. The diagnosis "chronic eczema" is obviously inadequate; at best it is a collective name for all those inflammatory processes of the skin which persist, though any outer irritating cause, even where it could be accused of provoking the process, has ceased to exist or is insignificant. Nor are we much further, when we recognise the evident origin of such manifestations on the skin from inner conditions, or constitution, in general; even such types as arthritic and lymphatic-exudative diathesis are all too general, too remote from the constitution of the particular person. The case is much more narrowly circumscribed by its susceptibility to the actions of a definite substance, say Natrium mur. This can be done by taking into account also those other symptoms which, though not the subject of the complaint, reveal the peculiar disposition of the patient. e.g., some two

years ago I had to treat a woman for a chronic erythematous eczema on the back of both hands; the symmetry of the location, triangular between wrist and metacarpophalangeal joints of thumb and first finger was striking, it is not infrequently seen and suggests some kind of vegetative-hormonal disorder. Neither the closest inspection nor any speculations on the internal processes which may have led to this manifestation, can disclose that such a case is likely to respond to Natrium mur.; but the reactions of this patient to the influence of cold and warm and her mental symptoms did so and Natrium mur. 12x was prescribed. Within a few days a furuncle developed on her face and the eczema disappeared. Should one ascribe this course of events to something unknown rather than to the intervention of Natrium mur.?

These dermatoses, of various appearance and location, are of themselves no more distinctive of Natrium mur. than of any other agent with an affinity to the skin. They are different from the seborrhoic syndrome and it is probably this kind which can be aggravated by various sodium salts; thus the sodium component appears responsible, if these irritations of the epidermis are aroused in provers or slightly stimulated for curing patients. A similar place may be assigned to the mapped tongue (lingua geographica) which is usually taken as a sign of "exudative diathesis"; this kind of chronic eczema of the tongue is in the picture of a number of drugs besides that of Natrium mur., thus, too, of secondary distinctive value.

It is the susceptibility of the person to either sodium or chloride or to both which determines whether Natrium mur. becomes active and which way the effects go; if the processes of the organism do not happen to be disposed towards its potential actions, the salt remains indifferent.

One cannot accurately separate the signs and symptoms on the various mucous membranes into either sodium—or chloride—effects. In chronic conditions a *thick white discharge "like the white of an egg"* is taken as a clinical indication, but not recorded in provings.

Comparison with other Natrium salts makes it probable that such chronic discharges are under the influence of sodium. The more acute ones from the upper respiratory ways would recall the halogen influence, such as coryza with much sneezing and copious secretion, especially of salty tears. This syndrome is, however, of minor significance in the total picture of Natrium mur. More general and characteristic is dryness of the mucous membranes which may make itself felt in the mouth, in the rectum or in the vagina. "Dryness of the mouth so that the tongue sticks to the palate" and "unquenchable thirst" are suggestive of the mass-action of sodium chloride; the possibility that such deflection of water from the mucous membranes may be influenced also by subtler Natrium mur. action *via* the vegetative nerves is thereby not excluded, but the provings record not less frequently copious salivation. Actually dryness of the mouth, thirst and salty taste have hardly any distinctive value.

Greater significance attaches to the dryness of the rectum for the typical constipation of Natrium mur.; the *fæces* are hard and dry and are evacuated only with the greatest exertion so that the anus may be torn and bleed and feel sore and burning. This syndrome becomes more distinctive when it is correlated to the tense "nervous" state of the Natrium mur. patient, his or her depressive mood. Aggravation at the seaside is alleged for the symptoms of Natrium mur. generally and for the constipation in particular. I found this modality of little or no value for the selection of Natrium mur., improvement at the seaside is not more and no less characteristic. In the typical constipation of Natrium mur., dryness of the rectum apparently combines with diminished tone. Natrium carbonicum has similar symptoms and the sodium component appears to play the main part in this syndrome. The type of constipation usually recurs periodically. How detailed, though, the description of the manifestations on this or that organ may be, in the picture of a constitutional remedy like Natrium mur., they remain subordinate

to those symptoms which characterise the patient as a whole. In the provings of Natrium mur. loose-stools are recorded as well and, of itself, diarrhoea would not exclude that the case is one for Natrium mur.; unless it is supported by general traits distinctive of the patient.

The same considerations apply to the syndrome from the female organs. *Dryness of the vagina* is alleged to make coition painful, but this symptom is, so far as I know, substantiated neither by the provings nor by clinical observations. Of more value in the drug picture is the syndrome of laxness of the female pelvic organs: the *bearing-down feeling usually accompanied by backache which is relieved by pressure, by lying on something hard or, when sitting, by supporting the lumbo-sacral region*; leucorrhoea may be present or not. This syndrome has so close a parallel in Sepia that it is sometimes not easy to differentiate between the two drugs, inasmuch as the general traits, the modalities and mental symptoms, too, are similar in many respects. To some extent Natrium carbonicum shows also this laxness of the pelvic organs so that it is probably under the influence of sodium rather than of chloride. The *menses* of Natrium mur. patients are *more often scanty and delayed*, but early and profuse menses do not contra-indicate the remedy. *Aggravation of the general complaints before, and more so at the end of the menses*, is the rule in women of the Natrium mur. type.

Involuntary discharge of urine on coughing, sneezing or walking is but another symptom of the laxness of the pelvic organs; in the total picture it is of little value. Nor are any other symptoms from the urinary tract distinctive.

These signs and symptoms from organs should be taken merely as illustrations of what may happen, and more or less frequently happens in persons of a Natrium mur. disposition. For a proper conception of the remedial potentialities of a substance like this, one has to go deeper into the personality, to the emotional-vegetative-hormonal plane of controls. This is not a matter of mental versus physical, or of functional versus structural symptoms, it

concerns the hierarchy of processes within an organism, the scene of decisive action is on a higher and subtler plane. The mental or functional symptoms may then be the only accessible ones, but they cannot be divorced from the structural side of the processes, not more so than in the peripheral manifestations of executive organs, though there the structural aspect may be focused. If we speak of *Natrium mur.* as of a deep-acting remedy, we mean that it acts on processes which dominate the person as a whole; but this deep and general action comes to pass only where and when the conditions of peculiar susceptibility exist. In a particular patient we have no other guidance than his symptoms and those referring to the patient as a whole have precedence before organ symptoms. The term "constitutional" remedy covers the same ground, but stresses rather the universal extent of the effects throughout the body. Terms like these serve to distinguish those very features which, within the homœopathic method, make certain comparatively harmless substances important remedies. The contrast to strong, poisonous agents is implicitly understood, or should be so. Remedies are "constitutional" by degrees; the nearer their potential actions are to normal, physiological functions, the more constitutional they are; the stronger the affinity to one organ or organ system, the less constitutional. Deep action must by no means be confused with strong action. It is therefore not incidental that those substances which are fundamental and universal constituents of the organism and play an integral rôle in its functioning, are most apt to affect the constitution, i.e., the person as a whole in preference to the part organs; provided, of course, that the disordered processes offer the peculiar condition for remedial activities.

Natrium mur. is an eminent example of this class of agents. Its range of physiological actions in the organism provides a wide indifferent zone; so that the strong, poisonous effects on the one end and the mild, but far-reaching remedial virtues on the other side are prone to be over-

looked. It needed the homœopathic method, both the elaborate experimenting on man and the technique of drug preparation, to reveal these virtues. Far from being a liability, Natrium mur. is one of the brightest assets in materia medica. Understanding of this drug picture goes a long way towards understanding homœopathy.

As regards dosage, the provings as well as clinical experience speak for the higher potencies, as pointed out by WATZKE who supervised and commented upon the extensive Austrian provings in 1848; the highest potency under consideration then being the 30th. At any rate, it appears essential that the salt has passed, through the three lowest grades at least, by trituration and not dilution. The existing difficulties and misunderstandings are increased by calling the higher potencies "stronger" than the lower ones; what is meant is, of course, that the higher potencies, having undergone more elaborate preparation, *can* be more suitable to act under certain conditions. Considering the extremely favourable conditions and the subtlety of the processes in which we expect the bearers of Natrium mur.-energy to act as a remedy, this assertion, far from being absurd, is perfectly plausible. It is then left to observation how far potentisation can proceed without losing that kind of energy peculiar to the remedial substance; such observations are, of course, comparable and can lead to conclusions only when they refer to a technically uniform procedure of potentisation. Without this understanding, assertions about active or suitable potencies, whatever their arithmetical designation may be, are irrelevant in respect of the question. In my own experience, the 12x trituration and the 30.Hahnemannian potency have shown themselves effective.

—Hippocrates, July, 1948.