Mack (C. S.)

Reprinted from the North American Journal of Homœopathy, April, 1894.

SOME CONSIDERATIONS BEARING UPON PRACTICE WITH DYNAMIC ANTAGONISTS IN CASES OF DRUG-POISONING.*

By CHAS. S. MACK, M.D.,

Professor of Materia Medica and Therapeutics in the Homœopathic Medical College in the University of Michigan.

THE dynamic property in a drug I should define as that by which the drug acts *immediately* upon vital processes, modifying their quality. Under this definition I should not include pure stimulants or pure depressants (if pure depressants exist), for such stimulants and depressants I picture as modifying the force, but not the *quality* of vital processes. I take it that when modification of vital processes is among the effects of chemical properties in a drug, immediate chemical changes (in tissues, secretions, or excretions) precede such modification; and that physical or chemical changes caused by a drug's dynamic properties are secondary to its immediate effect upon vital processes.

We can conceive of two kinds of dynamic antagonism, the one quite distinct from the other. For present purposes let us call the one *superficial antagonism*, and the other *radical antagonism.*†

By *superficial antagonism* we mean an antagonism patent in the tissues or functions of the body, but an antagonism between drugs which operate through respectively different (either partly different or wholly different) channels. By *radical antagonism* we mean an antagonism not only apparent in the tissues or functions of the body, but one between drugs which act through respectively (in all particulars) the same channel. We shall presently question whether really there be such a thing as radical antagonism. Let us first, however, consider whether the immediate effect either of superficial or of radical antagonism could be a normal condition.

Any positive, pure, dynamic effect of a drug (by which I mean a dynamic effect producible in health, and not the dynamic modification of disease effects) is abnormal.‡ A view which I would urge is

* Written especially for the North American Journal of Homœopathy.

† In this paper we shall not consider what might be called the dynamic antagonism between health and disease. On this subject one may see my little book, "Philosophy in Homœopathy," (published by Gross & Delbridge, 48 Madison Street, Chicago), pp. 43 to 45, and 81 to 87, where the claim of *contraria* to being the law of cure is under discussion.

‡ The fact that in medical literature positive, pure, dynamic effects of a drug are very frequently called *physiological* (instead of *pathogenetic*), or are described under the heading *physiological action*, seems in part a result of, and in part re-

that the immediate resultant of two opposing dynamic drug forces can never be intrinsically the same as a condition found in health,—that, though this resultant may *look* like what obtains in health, the same it is not. To illustrate: Take a normal pupil; dilate it with a mydriatic, and then contract it with a myotic; this pupil may now *look* as it did before your experiment began, but is a pupil normal when its condition is the immediate resultant of antagonism between two drugs? I think not. Indeed, may it not be that this pupil is farther from normal than it would be under the influence of either one alone of these drugs, even though it would then be dilated or else contracted? If the views here expressed or implied are correct, it follows that in rational practice any benefit which we can reasonably expect from dynamic antagonism (whether that antagonism be radical or superficial), must be something else than a direct reëstablishment of normal conditions.*

To some it may seem axiomatic that there is no such thing as radical antagonism, and superfluous to discuss whether there is; but much of medical literature seems to me to have been written from the standpoint of a belief in such antagonism. That he who first formulated *contraria contrariis opponenda* used the incomparable adjective *contrarius* seems to imply that he believed in radical antagonism (this thought will again be touched upon in this paper), and I suspect that many adopting that formula have also believed in such antagonism. I think that radical antagonism does not obtain—that could we, beginning with an antagonism patent on the surface in any one function or organ, trace the action of drugs indefinitely far toward the prime cause of their surface effects, we should always find them failing of the requirements necessary to radical antagonism, full and complete. But the question of radical antagonism seems to me one of opinion, and perhaps not capable of conclusive demonstration by purely inductive methods. Whatever links in the *modus operandi* of a dynamic drug may have been recognized in an inductive investiga-

---

sponsible for, a lack of recognition of the fact that such effects are not normal, but abnormal. Is not the science of drug pathogenesy as distinct from the science of physiology, as is the science of pathology? Is it not as confusing to call pathogenetic effects *physiological*, as it would be to call pathological effects *physiological?*

* By a *rational practice* in this connection I mean one in which we induce the pathogenetic effect of a dynamic drug, in the expectation, based upon some *a priori* reason not law, of benefiting the patient. One wishing to do so may find in the North American Journal of Homœopathy for January, 1892, an article upon "Empiricism, Rational Practice, and Practice under Guidance of Law," in which I attempted to give a complete definition of rational practice.

tion, there always must be, it seems to me, unrecognized links beyond. Let us again draw our illustration from mydriatics and myotics: To find that through these muscle fibres, or through those muscle fibres, the condition of the pupil under a given drug is determined, is not to get at the root of the matter; nor is the root reached when we fix upon this or upon that nerve, or even nerve-centre, as the one through which the muscle fibres are affected. To demonstrate radical antagonism full and complete between a mydriatic and a myotic would be to show them operating through respectively (in *all* particulars) one and the same channel. The word *all* in this connection includes some minutiæ which we may still hope to discover, and, I think, some which we shall never discover. A characteristic of science is that it can never exhaust the minutiæ of any phenomenon. We have simply expressed the opinion that radical antagonism does not obtain, and given a reason for thinking that its existence could not be inductively demonstrated. One who agrees to this reason may still think that such antagonism exists, even though undemonstrable.*

In the present paragraph we shall have regard only to superficial antagonism in rational practice; not to radical antagonism or to practice under guidance of law. Perhaps we may in some circumstances reasonably expect to ameliorate a patient's condition, or even to save his life, by effecting superficial antagonism in a function or organ necessary to life (*e. g.*, the respiration or the heart); but it seems possible to attach an entirely false significance to the fact of superficial antagonism in some function or organ not necessary to life. To illustrate I still again cite drug effects upon the pupil. Bartholow says he agrees with Schmiedeberg "that no example of physiological antagonism could be more exact" than that afforded by *muscarine* and *atropine*. Leading up to the statement that "viewed from all sides, these agents are exactly antagonistic," he is citing points of antagonism between them when he says: "On the eye, the contracted pupil of *muscarine*, due to stimulation of the circular fibres innervated by the third nerve, is opposed by the dilated pupil of *atro-*

* In this foot-note we depart for the moment from strict adherence to our definitions. Those definitions were not formulated with a view to specially considering whether antagonism radical *in kind* may obtain in one organ or function, and not in *all* those affected by any two antagonistic drugs; nor were they formulated with a view to specially considering whether an antagonist acting less deeply than another may still be *in kind* radical. The difficulty (or impossibility) of demonstrating radicalness of antagonism at any point would be such as I have just indicated. My opinion is that there is no such thing as radical antagonism between drugs at any point or in any degree.

pine, produced by stimulation of the radiating fibres, innervated by the sympathetic.*

If, in treating one poisoned by *muscarine*, our immediate object were (as in the common ophthalmological practice with mydriatics) simply to dilate the pupil, it might be of no moment whether it was through paralysis of the third nerve and circulatory fibres, or through stimulation of the sympathetic nerve and radiating fibres, or through a combination of these, or in still some other way, that the dilatation was effected. But in poisoning by *muscarine* the contraction of the pupil is not what harms the patient, and there is no advantage in merely dilating the pupil. If it is true that the contraction from *muscarine* is effected through a channel other than that through which the dilatation from *atropine* is effected, it may fairly be doubted whether this contraction and this dilatation have any bearing upon the question whether *atropine* will benefit a patient poisoned with *muscarine*. We tend, then, to the conclusion that, in the rational treatment of those seriously poisoned, while it may sometimes be useful to establish superficial antagonism in a function upon which life depends (as that of respiration), the establishment of superficial antagonism in a function or organ not essential to life (*e. g.*, the pupil) may be useless.

Up to this point our discussion has been upon giving in *rational practice* to those seriously poisoned dynamic antagonists. It may be that in *contraria contrariis opponenda* we have a law of nature, and *practice under guidance of law* I should not classify as (technically) *rational practice*. If *contraria* be law, considerations quite different from those bearing upon rational practice present themselves. A law of nature speaks from the true centre of things, and to us, who as inductive scientists observe surface facts, it states what relation between those facts must be established to a given end. It may be, then, that, if *contraria* is law, antagonism in an organ not necessary to life (*e. g.*, the pupil) is significant as an indication, and that the contrariety between *muscarine's* myosis and *atropine's* mydriasis, are facts between which that law states the relation, though the contrariety it demands might be more satisfactory between *muscarine* and some mydriatic, both of which, as far as we could trace them, we found operating (on muscle fibres in the iris, on nerves, etc.) through respectively one and the same channel. My use here of the word *contrariety* is perhaps incorrect, and will presently be referred to.

If out of regard for *contraria* as law we are to use dynamic antagonists in case of drug poisoning, and if I am mistaken in supposing

* Bartholow's "Hypodermatic Medication," Fifth edition, pp. 311, 312.

that no such thing as radical dynamic antagonism between drugs exists, we must, I think, fix either upon radical antagonism or else upon superficial antagonism—one or the other—as that which *contraria* exacts. It seems to me that there is an essential difference between these two kinds of antagonism (if radical exists at all), and that one and the same law (if *contraria* be law) does not speak indiscriminately of them both.

In writing of homœopathy's claim and of isopathy's, I have regarded as significant the facts that *similis* is a comparable adjective, and that *idem* is incomparable.* A drug may be in greater or less degree a similar, *i. e.*, may be more or less homœopathic. One who is disposed to accord any place to isopathy among medical systems must, I think, admit that, *idem* being an incomparable adjective, isopathic treatment (excepting with drugs which themselves were products of disease, or in case of poisoning by drugs) would be entirely impracticable, even if in theory correct; for in any given case one drug only could be isopathic,—in selecting the isopathic drug no latitude could be allowed,—a drug could not be more or less isopathic. Thoughts analogous to those suggested by the comparability ot *similis* and the incomparability of *idem* may suggest themselves to one considering whether the contrariety afforded in radical antagonism or that afforded in superficial antagonism is the contrariety which *contraria* would exact. If I am mistaken in thinking that radical antagonism between dynamic drugs does not obtain, it still appears that to any given dynamic drug there could be but one radical antagonist. *Contrarius* is an incomparable adjective, and a radical antagonist would meet the demands of *contraria;* but I think it would be as impracticable to comply with a law which exacted a radical antagonist (*contrarius* being incomparable) as it would be to practise isopathy, excepting with drugs which themselves were products of disease, or in case of drug poisoning (*idem* being incomparable).

Though *contrarius* is incomparable, we may by agreement regard it in *contraria contrariis opponenda* as predicating what we may agree to call comparable contrariety; such contrariety is afforded to superficial antagonism; superficial antagonism of greater or less degree may obtain. I take it that, notwithstanding the incomparability of *contrarius*, comparable contrariety has often been regarded as satisfying the demands of *contraria.* When, in the third paragraph back from this point, I said that the contrariety demanded by *contraria* might be more satisfactory between *muscarine* and some my-

,* See p., 43 of Philosophy in Homœopathy."

driatic other than *atropine* (than between *muscarine* and *atropine*), I spoke as if *contrarius* were comparable, which it is not.

I suppose that any drug worth considering as a dynamic antagonist in case of drug poisoning, is itself capable of producing serious poisoning. In passing I simply allude to the generally recognized possibility of seriously, even fatally, embarrassing one function or organ with a drug used for the sake of antagonism in some other function or organ. While this possibility is, as I say, generally recognized, the recognition is, I think, more cordial in theory than in practice. I think that *often* due caution is not observed in attempts to relieve with dynamic drugs persons seriously poisoned.

Conclusions to which this paper tends are : 1st, That radical antagonism (dynamic) between drugs does not obtain. 2nd, That in rational practice upon those poisoned with drugs there is no use in attempting superficial antagonism (dynamic) in functions or organs not necessary to life. 3rd, That in rational practice we should not without the greatest caution attempt to dynamically antagonize dynamic drug poisons. 4th, That if *contraria* is law and applicable in the treatment of those poisoned with dynamic drugs, the contrariety it exacts must be such as is afforded in superficial antagonism. 5th, That, if *contraria* is law, we should not without the greatest caution attempt under that law to relieve with dynamic antagonists those seriously poisoned by drugs, unless cause can be shown for thinking that under *contraria* doses which would in themselves be harmless are efficient.