COMMISSIONER'S DECISION

Section 36: Insufficiency - Metal Salt Bacteriacides

A claim in the application was refused for being too broad, covering uncharted and untested compounds. The applicant could not make a sound prediction that the whole class of compounds would be operative, though something of lesser scope related to what was already known in the prior art would be acceptable.

Rejection affirmed, modifications suggested.

Patent application 139,601, Class 260/308.5, filed April 13, 1972 by Rohm and Haas, assignce of George A. Miller and Ernest D. Weiler, is directed to Metal Salt Complexes of 3-Isothiazolones. These complexes are useful as fungicides and bacteriacides. Claim 1 of the application was rejected by the examiner as being indefinite and for insufficiency of description, i.e. for failure to satisfy Section 36 of the Patent Act. Claim 8 was also refused (on other grounds) but the applicant overcame that objection by cancelling the claim. No objection was taken to claims 2-26 which remain in the application.

A Hearing took place on May 24, 1978, to consider the matter, at which time Mr. George Fisk, attended by Mr. Frank Pole, represented the applicant before the Patent Appeal Board.

The claim which was refused is as follows:

1. A metal salt complex of the formula



wherein Y is a hydrogen atom, an unsubstituted or substituted alkyl group of 1 to 18 carbon atoms, wherein the substituted alkyl group is selected from the group consisting of hydroxylalkyl, haloalkyl, cyanoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, carboxyalkyl, carbalkoxyalkyl, alkoxyalkyl, aryloxyalkyl, alkylthioalkyl, arylthioalkyl, haloalkyoxyalkyl, morpholinoalkyl, piperidinoalkyl, pyrrolidonylalkyl, carbamoxyalkyl and 1sothiazolonylalkyl; an unsubstituted or substituted alkenyl group of 2 to 18 carbon atoms wherein the substituted alkenyl group is a haloalkenyl group; an unsubstituted or substituted alkynyl group of 2 to 18 carbon atoms wherein the substituted alkynyl group is a haloalkynyl group; an unsubstituted or substituted cycloalkyl group of 3 to 12 carbon atoms, having a 3 to 8 carbon atom ring, wherein the substituted cycloalkyl group is selected from the group consisting of methylcyclohexyl, dimethylcyclohexyl, trimethylcyclohexyl, ethylcyclohexyl and halocyclohexyl; an unsubstituted or substituted aralkyl group of up to 10 carbon atoms, wherein the substituted aralkyl group is selected from the group consisting of haloaralkyl, nitroaralkyl, (C1-C4) alkylaralkyl, and (C1-C4) alkloxyaralky1; or an unsubstituted or substituted aryl group of up to 10 carbon atoms; wherein the substituted aryl group is selected from the group consisting of haloaryl, cyanoaryl, nitroaryl, (C1-C4) alkylaryl, (C1-C4) alkylacylaminoaryl, (C1-C4) carbalhoxyaryl and sulfamylaryl; R is hydrogen, halogen, or a (C1-C4) alkyl group; or R and R' can be taken together to complete a benzene ring, optionally substituted with one or more halogen atoms, nitro groups, (C1-C4) alkyl groups, cyano groups, or (C_1-C_4) alkoxy groups, M is a cation of barium, cadmum, calcium, chromium cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, nickel, silver, sodium, strontium, tin, or zinc, or a complex of the cation with ammonia or an organic amine, X is an anion forming a compound with the cation M, a is the integer 1 or 2, and n is an integer which for the anion X satisfies the valence of the cation M.

It is apparent from a mere reading of the claim that it encompasses innumerable different compounds, doubtless tens of thousands. The issue is whether it covers too many compounds.

In the Final Action the examiner explained his objections in the following

terms:

The rejection of Claim 1 is maintained and the reason for such objection is that the use of the expression "substituted" renders the claim indefinite. As has been stated in earlier Office Actions, the only substituents specifically described in the disclosure for the hydrocarbon radicals are halogens. The references in the middle paragraph of Page 3 of the Amendment letter of June 1, 1976, to non-halogen substituents on Pages 3 to 9 are mere recitation only. There are no physical constants, spectroscopic data or proven utility for the nonhalogen substituted hydrocarbons. Therefore there is no proof that these listed compounds were in fact ever prepared due to the lack of identification factors. In the absence of such data, the applicant is either claiming an invention which he has not made or failing to meet the requirements of a full disclosure, if he has made them. If the applicant has made all those compounds that are disclosed and claimed (embraced by Claim 1), he does not give all the information that is necessary for successful operation or use of the invention. If he has not made them, then no valid claim can be based on the incomplete description provided by the present disclosure. Claim 1 is accordingly rejected.

His particular concern is that the "substituted" alkyl groups referred to in lines 2 and 3 of the claim should be restricted to halogen substituted alkyl groups.

In his written response, the applicant has argued that:

The applicant has described the invention in terms of the chemical formulae of the compounds within the scope of claim 1. There is no requirement in <u>The Patent Act</u> that utility be proven, or that there be proof in the specification that the listed compounds were in fact prepared. The Examiner has no basis in law for requiring what he calls "identification factors" such as physical constants or spectroscopic data. The disclosure given by the applicant is 'adequate for a person skilled in the art to ascertain what is covered by the invention, and it is not seen that spectroscopic data or physical constants would aid such a person.

The applicant is only required by Section 36(1) to correctly and fully describe the invention and its operation or use, in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it appertains, to make, construct, compound and use it. The applicant is not required by that section to disclose proof of utility, nor to give extraneous matters, such as the physical constants of the compounds included within the scope of the invention. The Examiner's mere suspicion that some of the compounds within the scope of the invention have not been made should not be enough to disentitle the applicant from the full scope of protection to which he is entitled.

At the Hearing Mr. Fisk relied heavily upon applicants prior Canadian Patents 866828, March 23, 1971 and 889812 issued January 4, 1972. In them the 3-isothiazolone compounds themselves are claimed, as distinct from the metal salt complexes thereof which are the subject of the present application. The patents, he said, demonstrates that the compounds as a group were known previously in the patent literature, and further that they are known to possess the same biocidal properties as the metal complexes (though they were not so stable). By forming the metal complexes of the "known" compounds their stability is enhanced. It was consequently a reasonable assumption (Mr. Fisk contended) that once it was discovered by the applicants inventors that it could improve the stability of some of the compounds by metallizing them that all (or at least nearly all) of the compounds would be improved by metallizing them. It was emphasized that the starting compounds were known, and that both the compounds and the metal complexes possess the same useful bacteriacidal properties. Mr. Fisk says that these factors serve to distinguish the present application from that considered in <u>Monsanto v. Commissioner of Patents</u>, Patent Office Record, April 25, 1978; affirmed Federal Court of Appeal, June 24, 1977; now under appeal to the Supreme Court.

In the <u>Monsanto</u> case we rejected certain claims for being too broad, and going beyond the area of sound prediction. In <u>Monsanto</u> the applicant had specifically shown that three compounds were effective, but attempted to claim 126.

To further distinguish from Monsanto, Mr. Fisk referred to the fact that the applicant had exemplified in his specification 56 different complexes, with the ring substituents ranging from those which are strongly electro positive to those strongly electro negative. He also adduced an affidavit from one of the two inventors in which Dr. Miller avers, inter alia, that metallizing the compounds increased their stability, and consequently their usefulness, that a competent chemist would have no difficulty in complexing the compounds, and that he saw no reason why all of the compounds covered would not have the same bacticidal activity since they all contain the same basic structure.

As for the emphasis placed upon the compounds tried (56), we note that 56 out of many thousands is a much smaller proportion than the 3 out of 126 exemplified in the <u>Monsanto</u> case. On the other hand, consideration must be given to the spectrum or range of the examples within the group in assessing how useful such examples are in demonstrating that the whole group of compounds are likely to be effected. Put differently, if all the examples were restricted to a small corner of the whole field claimed, they might not serve to demonstrate that it would be a reasonable prediction that the whole field is effective. If judiciously scattered throughout the whole field, they might.

Mr. Fisk also referred to numerous cases to support his contention that a patentee need not investigate every possible substance within a group claimed if there is a reasonable probability that all compounds will work. These included:

<u>Burton Parsons v Hewlett Pæckard</u> S.C. 1975, 17 C.P.R.(2d) 97 <u>Mineral Separation v Noranda Mines</u> 1950 S.C.R. 36 <u>Leonhardt v Kallé</u> (1895) 12 R.P.C. 103 <u>Olin Matheson v Biorex</u> (1970) R.P.C. 157 <u>Mobil Oil Corporation's Application</u> 1970 Fleet Street Reports 265

Our problem, then, is to decide whether in the present situation the applicant could make a "sound prediction" that the whole class covered by the claim is operative. In doing so we must also weigh the interdictions against speculative overclaiming explored in depth in the <u>Monsanto</u> decision, <u>supra</u>, and developed in such jurisprudence as <u>Hoechst v Gilbert</u> (1966) S.C.R. 189; <u>Rhône-Poulenc v</u> <u>Gilbert</u> (1968) S.C.R. 950 at 953; <u>Steel Co. of Canada v Swaco Wire and Nail</u> 11 C.P.R. (2d) 153 at 195; <u>B.V.D. v Canadian Celanese</u> (1936) Ex. C.R. 139 at 148 and 1936 S.C.R. 221 at 237; <u>Boehringer Sohn v Bell Craig</u> 1962 Ex. C.R. 201; <u>Hoechst v Gilbert</u> (1964) Vol. 1, Ex. C.R. 710 and 1966 S.C.R. 189; <u>In re May and <u>Baker</u> (1948) 65 R.P.C. 255, (1949) 66 R.P.C. 8 and (1950) 67 R.P.C. 23; <u>Société Rhône-Poulenc v Ciba</u> (1967) 35 F.P.C. 174 at 201-205 and 1968 S.C.R. 950; <u>In re Abraham Esau</u> (1936) 49 R.P.C. 85; <u>In re Shell Development</u> (1947) 64 R.P.C. 151; Rohm & Haas v Commissioner of Patents 1959 Ex. C.R. 153;</u> <u>Vidol Dyes v Levenstein</u> (1912) 29 R.P.C. 245; and <u>Eastman Kodak's Application</u> 1970 R.P.C. 548 at 561-563. Also of interest is the United States decision <u>In re Stokal et al</u> 113 U.S.P.Q. 283 (1957) and the recent Japanese decision of the Tokyo High Court, <u>Farbwerkelbechst v the Director of the Patent Office</u> as reported in the International Review of Industrial Property & Copyright (IIC) Vol. 8, No. 8, 1977 at p. 566.

Having weighed all these factors we have reached the conclusion that there might be some basis for taking it as a reasonable prediction that the compounds shown in the prior patents drawn to our attention, viz Canadian patents 886828 and 889812, and U.S. patents 3647910 and 3523121, would all be more stable and effective if metallized, and recommend that the applicant be permitted claims of the same scope in this application. The prior art shows that it was known that such compounds possess bacteriacidal properties. They all possess the same basic isothiazolone nucleus. It has already been recognized that there was adequate support for such compounds in unmetallized form in the issued patents.

We note, however, that rejected claim 1 covers a very much larger field than that disclosed in the prior art of record, and in that respect Mr. Fisk's arguments about the compounds being known do not hold. In so far as it exceeds the prior art limits, we are satisfied that the claim goes beyond the area of reasonable prediction into that of speculative overclaiming, and recommend that it be refused.

The claims in the prior patents are already of wide scope. Claim 1 of this application opens up the field considerably further, without any good evidence that the wider field is operative. At the Hearing Mr. Fisk based his arguments upon the proposition that claim 1 is directed to metalized derivatives of compounds already disclosed in the prior art patents. To quote:

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This is a well known class of compounds published in a Canadian patent prior to the filing of this case.

Consequently we think it only proper that the claim 1 should in fact be limited to what was shown in that prior art. If so restricted the claim would be based upon what could be reasonably predicted, and should be allowed to proceed.

Gordon A. Asher Chairman Patent Appeal Board, Canada

Having considered the prosecution of this application and the recommendations of the Patent Appeal Board, I now refuse claim 1 under Section 42 of the Patent Act. If claim 1 is amended to the subject matter suggested by the Board, it will be acceptable. The applicant has six months within which to make such amendment or to act under Section 44.

Brown

Acting Commissioner of Patents

Dated at Hull, Quebec this 20th. day of July, 1978

Agent for Applicant Gowling & Henderson Box 466, Terminal A Ottawa, Ont.