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Paper 12
Entered: May 20, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTERNATIONAL FLAVORS & FRAGRANCES INC.
Petitioner

v.

THE UNITED STATES OF AMERICA,
AS REPRESENTED BY THE SECRETARY OF AGRICULTURE
Patent Owner

Case IPR2013-00124
Patent 7,579,016 B2

Before LORA M. GREEN, FRANCISCO C. PRATS, and MICHAEL J. FITZPATRICK, *Administrative Patent Judges*.

GREEN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION

35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Petitioner, International Flavors & Fragrances Inc. ("International Flavors"), filed a Petition on January 25, 2013, for an *inter partes* review of claims 1, 4, 5, 7, 8, and 14-26 of U.S. Patent No. 7,579,016 ("the '016 Patent") pursuant to 35 U.S.C. §§ 311-319. Paper 1 ("Pet."). Patent Owner, The United States of America, as represented by the Secretary of Agriculture, did not file a Preliminary Patent Owner Response. On June 27, 2013, the Patent Trial and Appeal Board ("Board") instituted trial as to all of the challenged claims, that is, claims 1, 4, 5, 7, 8, and 14-26. Paper 6 ("Dec.").

Patent Owner did not file a Patent Owner Response, but only filed a Motion to Amend. Paper 10 ("Mot.").[1] Petitioner did not file an Opposition to the Motion to Amend. In a conference call, held on February 3, 2014, both parties confirmed that they did not intend to file any additional substantive papers, and would not request an oral hearing. Paper 11.

The Board has jurisdiction under 35 U.S.C. § 6(c). This final written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

In its Motion to Amend, Patent Owner requests cancellation of claims 1-26, and substitution of proposed claims 27-45. Patent Owner's Motion to Amend is *granted-in-part.*

B. The '016 Patent

According to the '016 patent, "[d]iseases transmitted by blood-feeding arthropods are a serious threat to public health worldwide." Ex. 1001, col. 1,

[1] We note that the Motion to Amend does not contain page numbers. We, therefore, number the page after the title page as page 1, and number the remainder of the pages sequentially therefrom.

ll. 17-18. For example, over three billion people live under the threat of malaria, and West Nile virus resulted in over 780 deaths in the United States between 1999-2005. *Id.* at col. 1, ll. 20-27.

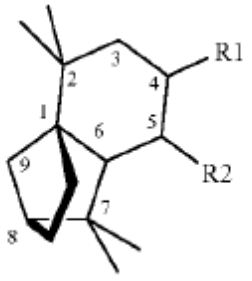
The ’016 patent teaches that “(–)-isolongifolenone, which occurs in nature in trace amounts, is more effective than Deet in repelling ticks and deterring feeding mosquitoes.” *Id*. at col. 1, ll. 38-40. In addition, “some isolongifolenone analogs have repellent and deterrent activities comparable to isolongifolenone.” *Id.* at col. 1, ll. 42-43. The ’016 patent is, therefore, drawn to the use of isolongifolenone analogs to repel arthropods (*id.* at col. 1, ll. 12-13), such as ticks and mosquitoes (*id.* at col. 8, ll. 21-51).

According to the ’016 patent, “repelling” includes inhibiting feeding on a host, for example, by causing arthropods to veer away from the host (*id.* at col. 7, ll. 49-56). For example, mosquitoes are shown to be repelled when the number of bites on treated human skin is reduced as compared to untreated skin (*id.* at col. 7, ll. 57-67).

C. Exemplary Claims

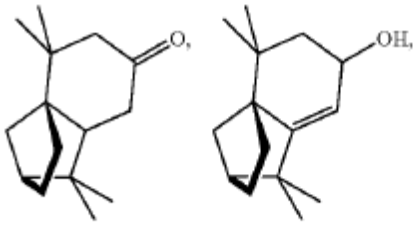
Claims 1 and 8 of the ’016 patent are reproduced below:

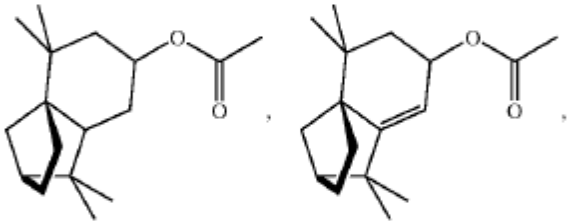
> 1. A method for repelling arthropods, said method comprising treating an object or area with an arthropod repelling effective amount of at least one isolongifolenone analog and optionally a carrier or carrier material; wherein said at least one isolongifolenone analog has the following formula:

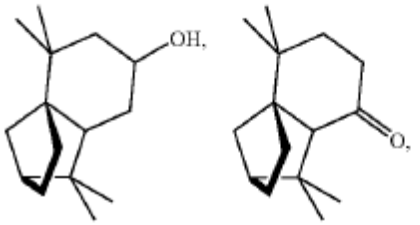


wherein R_1 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid and R_2 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid; optionally there is a double bond between carbons 5 and 6 and R_2 is hydrogen.

8. The method according to claim 1, wherein said at least one isolongifolenone analog is selected from the group consisting of





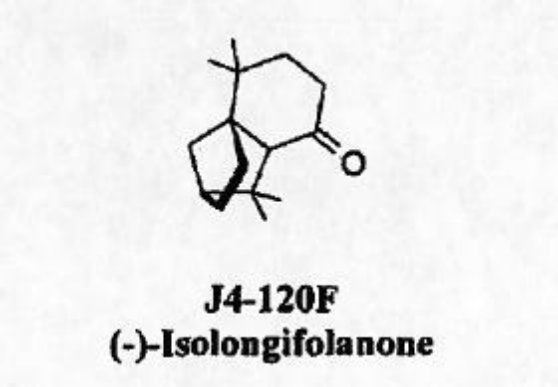


and mixtures thereof.

D. Instituted Challenges

1. Anticipation of claims 1, 4, 5, 7, 8, 14, 19-21, and 23 by Behan[2]

In its Petition, International Flavors noted that claim 1, as well as the challenged dependent claims, encompass the use of isolongifolanone, which is an analog of isolongifolenone, wherein R_1 is hydrogen and R_2 is oxygen, as shown below:



Pet. 7-8. International Flavors cited Behan for teaching a method of using isolongifolanone in a method of repelling arthropods. *Id.* at 8; *see also* Claim Chart at 13-16 (stating that Behan teaches the use of isolongifolanone as an insect repellent). Thus, International Flavors challenged claims 1, 4, 5, 7, 8, 14, 19-21, and 23 of the '016 patent as being anticipated by Behan's disclosure of the use of isolongifolanone as an insect repellent. *Id.* at 18.

Specifically, Behan is drawn to the use of certain perfume ingredients as insect repellents. Ex. 1002, 1. Behan lists a variety of perfume ingredients that may be used as insect repellents, including isolongifolanone. *Id.* at 2-3. In particular, the perfume ingredients may be used to repel mosquitoes, such as members of the genus *Aedes*, as well as cockroaches.

[2] PCT International Publication Number WO 00/19822, published April 13, 2000. Ex. 1002.

Id. at 4. Behan tested the ability of citral diethyl actetal to repel mosquitoes (*id.* at 7-8, Example 1), and also provided a test for determining the ability of a perfume ingredient to repel cockroaches (*id.* at 8-9, Example 2). Behan's disclosure, however, does not include an example, nor present any data, demonstrating the ability of isolongifolanone to repel arthropods, such as mosquitoes or cockroaches.

2. Obviousness of claims 1, 4, 5, 7, 8, 14-21, and 23 over the combination of Behan and Grieco[3]

In its Petition, International Flavors relied upon the teachings of Behan as set forth above in the discussion of the challenge based on anticipation. Pet. 19. Grieco was cited to show that the use of insect repellents in the amounts recited in claims 15-18 was known in the art, as well as to establish that it would have been within the level of skill of the ordinary artisan to optimize the amounts of insect repellent required to target a desired insect. *Id.* at 20-21. Grieco does not disclose the use of isolongifolenone derivatives, such as isolongifolanone.

3. Obviousness of claims 1, 4, 5, 7, 8, 14, and 19-26 over the combination of Behan and Carroll[4]

International Flavors again relied upon the teachings of Behan as set forth above in the discussion of the anticipation challenge. Pet. 22. International Flavors cited Carroll to support its contention that the ordinary artisan reasonably would have expected that an insect repellent that exhibits activity against mosquitoes, such as *Aedes aegypti*, also would have activity

[3] John P. Grieco et al., *A Novel High-Throughput Screening System to Evaluate the Behavioral Response of Adult Mosquitoes to Chemicals*, 21 J. AM. MOSQUITO CONTROL ASS'N 404-411 (2005). Ex. 1003.
[4] J. F. Carroll et al., *Repellency of Deet and SS220 applied to skin involves olfactory sensing by two species of ticks*, 19 MEDICAL AND VETERINARY ENTOMOLOGY 101-106 (2006). Ex. 1004.

against other mosquito species, as well as ticks. *Id.* at 23. Like Grieco, Carroll does not disclose the use of isolongifolenone derivatives, such as isolongifolanone.

II. ANALYSIS

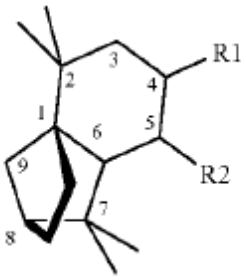
A. Patent Owner's Motion to Amend Claims

Patent Owner proposes nineteen substitute claims, numbered 27-45. Proposed claim 27 corresponds to original claim 1, but limits the isolongifolenone analogs to the first five compounds of the Markush group in original claim 8, and mixtures of those compounds. Mot. 1. Proposed dependent claims 28-44 correspond to original claims 9-26. Proposed independent claim 45 also corresponds to original claim 1, but requires that the arthropods are ticks or mites. *Id.*

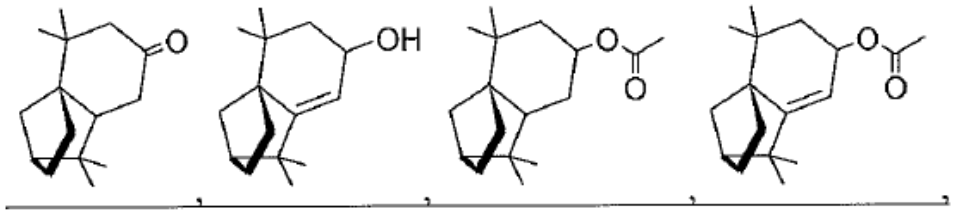
As the moving party, Patent Owner bears the burden of proof to establish that it is entitled to the relief requested. 37 C.F.R. § 42.20(c). The proposed amendment is not entered automatically, but only upon Patent Owner having demonstrated, by a preponderance of the evidence, the patentability of the proposed claims. *See, e.g.,* 37 C.F.R. § 42.1(d) (noting that the "default evidentiary standard [in proceedings before the Board] is a preponderance of the evidence.").

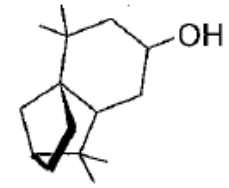
Proposed independent claims 27 and 45 are reproduced below, with underlined text indicating material inserted relative to original claim 1:

> 27. A method for repelling arthropods, said method comprising treating an object or area with an arthropod repelling effective amount of at least one isolongifolenone analog and optionally a carrier or carrier material; wherein said at least one isolongifolenone analog has the following formula:



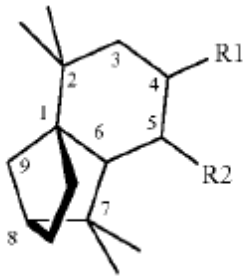
wherein R_1 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid and R_2 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid; optionally there is a double bond between carbons 5 and 6 and R_2 is hydrogen; wherein said at least one isolongifolenone analog is selected from the group consisting of





, and mixtures thereof.

45. A method for repelling arthropods, said method comprising treating an object or area with an arthropod repelling effective amount of at least one isolongifolenone analog and optionally a carrier or carrier material; wherein said at least one isolongifolenone analog has the following formula:



> wherein R_1 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid and R_2 is hydrogen, an oxygen, a C_{1-10} alcohol, aldehyde, alkyl, ether, or esters of said alcohol with a C_{1-10} saturated or unsaturated, straight or branched acid; optionally there is a double bond between carbons 5 and 6 and R_2 is hydrogen; wherein said arthropods are ticks or mites.

Mot. 1-2, 6-7 (emphasis added).

1. No Broadening of Scope

Proposed substitute claims may not enlarge the scope of original patent claims. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Patent Owner notes that proposed independent claim 27 includes all of the limitations of original independent claim 1, as well as an additional Markush group limitation specifying the isolongifolenone analogs that may be used in the claimed method. Mot. 6. Specifically, proposed claim 27 limits the analogs used in the method to the first five compounds of original dependent claim 8. *Id.* at 1. In addition, proposed independent claim 45 includes all of the limitations of claim 1, but adds the limitation that the method is limited to a method of repelling arthropods, wherein the arthropods are ticks or mites. *Id.* at 6.

Proposed claims 27 and 45, therefore, only add features to the claims they would substitute, and do not remove any limitation therefrom. Proposed dependent claims 28-44 correspond to claims 9-26, with only the

dependency changed to depend from proposed independent claim 27. *Id.* at 1. Accordingly, we find that none of the substitute claims impermissibly enlarges the scope of the original claims.

2. Written Description Support

Pursuant to 37 C.F.R. § 42.121(b)(1), a motion to amend in an *inter partes* review must set forth "[t]he support in the original disclosure of the patent for each claim that is added or amended."

In its Motion, Patent Owner explains that proposed claim 27 is supported by paragraph 71, as well as paragraphs 78-83 of U.S. Application Serial Number 12/106,505 (Ex. 2001, "the '505 application"). Mot. 7. Upon review of those paragraphs of the '505 application, we agree. Specifically, paragraph 71 supports original claim 1, and paragraphs 78-83 support the added material of the Markush group from which is selected the isolongifolenone analog.

Patent Owner explains further that support for proposed claim 45 may be found at paragraphs 71 and 36 of the '505 application. Mot. 7. Paragraph 71 has been discussed above, and paragraph 36 refers to ticks and mites.

As to dependent claims 28-44, Patent Owner points to paragraph 85 of the '505 application, and also points to paragraph 31 for claim 41, paragraph 52 for claim 42, and paragraph 36 for claims 43 and 44. Mot. 7. Paragraph 85 specifies the effective amounts of the at least one isolongifolenone analog as set forth in dependent claims 33-36, as well as different arthropods as set forth in dependent claims 37-44.

We conclude that Patent Owner has made a sufficient showing that each of proposed independent claims 27 and 45, as well as each of proposed

dependent claims 28-44, as a whole, has written description support in the application as filed.

3. Patentability over the Prior Art

Distinguishing the proposed claims only from the prior art references applied to the original patent claims is insufficient to demonstrate patentability over prior art. As the moving party, a patent owner bears the burden to show entitlement to the relief requested. 37 C.F.R. § 42.20(c). We agree with the reasoning in *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, slip op. at 33 (PTAB January 7, 2014 (Paper 66)), as to what that burden entails. Specifically, in the case of a motion to amend, the patent owner bears the burden of proof to demonstrate patentability of the proposed claims over the prior art in general, and thus entitlement to the proposed claims. *Id.* As set forth in *Idle Free*, that does not mean that the patent owner is "assumed to be aware of every item of prior art presumed to be known to a hypothetical person of ordinary skill in the art." *Id.* Rather, the patent owner should discuss, as well as present evidence, if appropriate, as to the level of ordinary skill in the art, and what was known regarding the features being relied upon to demonstrate patentability of the proposed claims. *See id.*

As an initial matter, Patent Owner contends that independent claim 27 is patentable over the references cited in the Decision to Institute. Mot. 8. Specifically, characterizing Behan as the "apparent" closest prior art, Patent Owner notes that Behan never actually provided experimental data demonstrating that isolongifolanone repels insects. *Id.* Moreover, Patent Owner contends that the references cited in the Decision to Institute "do not disclose or suggest that modifying the structure of isolongifolanone would

lead a person of ordinary skill in the art to conclude that such modified compounds would have the same or similar properties as isolongifolanone." *Id.*

Patent Owner provides several publications, as well as the Declaration of Dr. Aijun Zhang (Ex. 2005; "Zhang Declaration"), to demonstrate the level of ordinary skill in the art, as well as the unobviousness of features being relied upon to demonstrate patentability of the proposed claims. Although Patent Owner's statement that Behan is the "apparent" closest prior art may appear conclusory, Patent Owner goes beyond that statement to demonstrate the level of ordinary skill in the art, as well as providing evidence regarding what would have been understood by the ordinary artisan as to those features being relied upon to demonstrate patentability of the proposed claim.

Specifically, Patent Owner cites several references as evidence that small changes in structure can result in a compound with very different properties. Mot. 8. Thus, Patent Owner argues that the ordinary artisan would have expected that minor structural changes to a known insect repellent could result in a compound that no longer repels insects. *Id.*

Patent Owner first cites Debboun and Wagman[5], arguing that the authors tested seventeen derivatives of N,N-diethyl-3-methylbenzamide (DEET) and N,N-diethylphenylacetamide (DEPA) for their ability to repel

[5] Mustapha Debboun and Joseph Wagman, *In Vitro Repellency of N,N-Diethyl-3-methylbenzamide and N,N-Diethylphenylacetamide Analogs Against Aedes aegypti and Anopheles stephensi (Diptera:Culicidae)*, 41 JOURNAL OF MEDICAL ENTOMOLOGY 430-34 (2002). Ex. 2002.

insects. *Id.* (citing Ex. 2 [sic, 2002],[6] Abstract). According to Patent Owner, seven of the analogs tested were found to be less effective than DEET, and one of the analogs, N,N-diethyl-3-hydroxybenzamide, was found to be a poor repellent. *Id.*

Specifically, Debboun and Wagman evaluated *in vitro* the repellency of a series of seventeen analogs of DEET and DEPA against laboratory-reared mosquitoes, *Aedes aegypti* and *Anopheles stephensi*. Ex. 2002, Abstract. The seventeen compounds were chosen based on the similarity of their molecular electronic profile to DEET and DEPA, as a previous study had shown that it was possible to predict the repellency of DEET analogs by examining certain molecular electronic properties. *Id.* at 431, col. 1.

According to the authors:

> One compound, *N,N*-diethyl-2-[3-(triflouromethyl)phenyl] acetamide, provided significantly better repellency than DEET against *Ae. aegypti* and slightly improved efficacy against *An. stephensi*. Eight of the analogs were as effective as or slightly more repellent than DEET against both species. Seven analogs were less effective than DEET and one compound, *N,N*-diethyl-3-hydroxybenzamide, was [ ] a poor repellent. Overall, two DEPA analogs and a single DEET analog provided better repellency than DEET against both mosquito species and warrant future laboratory and field evaluation.

Id. at Abstract.

[6] We note that Patent Owner refers to "Exhibit 2," whereas the actual Exhibit number as designated in the record of the proceeding is "Exhibit 2002." *See* Mot. 8. As the Exhibit numbers cited by Patent Owner correspond to the actual exhibit number, and were easily found, Patent Owner's error in this regard is harmless in this case. We caution, however, without that clear correspondence, we might have found differently.

Patent Owner then cites Teal (Ex. 2003) for its disclosure that (Z)-11-hexadecen-1-ol (precursor to (Z)-11-hexadecenal) repels female *Heliothis zea*, while (Z)-11-hexadecenal attracts female *Heliothis zea*. Mot. 8 (citing Ex. 2003, 778).[7]

Hwang, according to Patent Owner, demonstrates that a modification as simple as changing a double bond from *cis* to *trans* affects repellency, as oleic acid was found to be a repellent, whereas elaidic acid was an attractant. Mot. 8 (citing Ex. 2004,[8] Table 2).

Patent Owner also cites the Zhang Declaration as demonstrating that "J4-120F (precursor to isolongifolanone J4-120H) and J4-120G (saturated form of J4-120F) did not have statistically significant repellency towards female *Aedes aegypti* and *Ix. scapularis* tick nymphs in comparison to isolongifolanone." Mot. 8 (citing Ex. 2005, Figs. 1, 2, and 3). Specifically, Dr. Zhang concludes, based on the results presented in the Declaration, that the ordinary artisan would not expect that minor structural changes to a known insect, tick, or mite repellent would result in a modified compound having the same repellency as the parent compound. Ex. 2005 ¶ 2. According to Dr. Zhang, such activity cannot be predicted based on structure alone, but must be determined by experiment. *Id.*

In order to establish a prima facie case of obviousness based on structural similarity, the prior art must provide a reason to make the claimed compound, and there must also be "'adequate support in the prior art' for the

[7] P.E.A. Teal et al., *(Z)-11-Hexadecen-1-ol: A Behavioral Modifying Chemical Present in the Pheromone Gland of Female Heliothis Zea (Lepidoptera:Noctuidae)*, 116 CAN. ENTOMOLOGY 777-79 (1984). Ex. 2003.
[8] Yih-Shen Hwang et al., *Structure-Activity Relationship of Unsaturated Fatty Acids as Mosquito Ovipositional Repellents*, 10 J. OF CHEM. ECOLOGY 145-51 (1984). Ex. 2004.

change in structure." *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356 (Fed. Cir. 2007) (quoting *In re Grabiak*, 769 F.2d 729, 731-32 (Fed. Cir. 1985)). The United States Court of Appeals for the Federal Circuit noted that the test for obviousness of a compound based on structural similarity is in accordance with the legal principles enunciated by the Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), specifically, that it is important to identify "'a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does' in an obviousness determination." *Takeda*, 492 F.3d at 1356-57 (quoting *KSR*, 550 U.S. at 418). Thus, "in cases involving new chemical compounds, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound." *Takeda*, 492 F.3d at 1357.

Moreover, the field of search is required "to be among a 'finite number of identified solutions.'" *Bayer Schering Pharma A.G. v. Barr Labs., Inc.*, 575 F.3d 1341, 1347 (Fed. Cir. 2009) (quoting *KSR*, 550 U.S. at 421). That is, the number of options needs to "be 'small or easily traversed.'" *Bayer*, 575 F.3d at 1347 (quoting *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358, 1364 (Fed. Cir. 2008)).

As previously stated, Behan lists a variety of perfume ingredients, including isolongifolanone, which may be used as insect repellents. Ex. 1002, 4-5. Behan does not provide any examples or data drawn to the use of isolongifolanone, nor does it provide any disclosure or guidance as to structural modifications that could be made to isolongifolanone, while maintaining the ability to repel arthropods. The evidence cited by Patent

Owner demonstrates that even small changes in structure can change the biological activity of an insect repellent. Because the prior art does not provide a reason to modify isolongifolanone to arrive at the modified isolongifolanone compounds of proposed claim 27, nor does it provide a reasonable expectation that such modifications would result in a compound having the desired insect repellent activity, we conclude that the preponderance of the evidence supports the patentability of claim 27. As to dependent claims 28-44, because those claims incorporate all of the limitations of claim 27, they would be patentable for the same reasons. Mot. 8-9.

Patent Owner contends that proposed independent claim 45 is also patentable over Behan, which Patent Owner asserts "appears to be the closest known prior art," because the ordinary artisan would not expect, based on the cited references, that a compound known to repel mosquitoes, such as *Aedes aegypti*, would also repel ticks, such as *Amblyomma variegatum*. Mot. 9. Patent Owner cites McMahon (Ex. 2006)[9] as demonstrating that DEET, which is repellent towards some ticks and mites, does not repel "*Amblyomma variegatum* ticks when the ticks [are] exposed to their aggregation-attachment pheromone and DEET." Mot. 9 (citing Ex. 2006, Table 1). McMahon notes that even when used at approximately ten times the amount used to repel the mosquito *Aedes aegypti*, DEET did not inhibit the attraction of the tick species, *Amblyomma variegatum*, to its pheromone, and, thus, did not repel the tick species. Ex. 2006, 374-375.

[9] C. McMahon et al., *In Vitro assays for repellents and deterrents for ticks: differing effects of products when tested with attractant or arrestment stimuli*, 17 MEDICAL AND VETERINARY ENTOMOLOGY 370-378 (2003).

Patent owner further relies on the Zhang Declaration, as discussed above, to support its contention that "a person of ordinary skill in the art would expect that minor structural changes to a known insect repellant often results in a modified compound that does not repel ticks and mites." Mot. 10.

Proposed claim 45 is drawn to a method of repelling arthropods, which requires treating an object or area with an arthropod repelling effective amount of an isolongifolenone analog, wherein the isolongifolenone analog may be isolongifolanone. As previously stated, Behan teaches the use of certain perfume ingredients, such as isolongifolanone, in methods of repelling insects. Ex. 1002, 1-2. In a preferred embodiment, the insects are mosquitoes, such as members of the *Aedes* genus, as well as cockroaches. *Id.* at 4. Behan also teaches that the perfume ingredient may be applied to the object or airspace in order to repel insects from an object or airspace. *Id.* at 3.

We acknowledge that McMahon and the Zhang Declaration are evidence that the ordinary artisan would not have had a reasonable expectation that, because a compound is known to repel mosquitoes, such as *Aedes aegypti*, the compound would also repel ticks, such as *Amblyomma variegatum*. Claim 45, however, encompasses the use of isolongifolanone when R_1 is a hydrogen atom and R_2 is an oxygen atom, which is the same compound specifically taught by Behan. *See* Pet. 7-8 (showing the structure of isolongifolanone, and discussing how it is encompassed by the chemical formula set forth in claim 1). As discussed above, Behan teaches the use of isolongifolanone to repel mosquitoes or cockroaches. Patent Owner provides no evidence that ticks and mites would not be present on the same

objects or areas where mosquitoes and cockroaches are found, which are the insects addressed by Behan. Thus, by applying the isolongifolanone taught by Behan to an object or airspace for the purpose of repelling mosquitoes or cockroaches, one would also inherently repel ticks and mites.

"It is a general rule that merely discovering and claiming a new benefit of an *old* process cannot render the process again patentable." *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *see also Perricone v. Medicis Pharm. Corp.*, 432 F.3d 1368, 1377-78 (Fed. Cir. 2005) (noting that the realization of a new benefit of an old process does not render that process patentable); *Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc.*, 246 F.3d 1368, 1376 (Fed. Cir. 2001) (stating in the context of a claimed process that was drawn to the same use comprising the same steps of the prior art, "[n]ewly discovered results of known processes directed to the same purpose are not patentable because such results are inherent."). We, therefore, conclude that the preponderance of the evidence does not support the patentability of proposed claim 45.

III. CONCLUSION

Patent Owner has shown, by a preponderance of the evidence, that its proposed substitute claims 27-44 are patentable over the prior art. Patent Owner, however, has not shown by a preponderance of the evidence that proposed substitute claim 45 also is patentable over the prior art.

Accordingly, it is

ORDERED that Patent Owner's request to cancel claims 1-26 of the '016 patent is *granted*;

FURTHER ORDERED that Patent Owner's Motion to Amend is *granted* as to substitute claims 27-44, but *denied* as to substitute claim 45;

FURTHER ORDERED that because this is a final decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

Paralegal;

llw

Petitioner:

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