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SUPREME COURT OF ARKANSAS

No. 10-26

MARY E. GREEN AND MICHAEL B. GREEN, INDIVIDUALLY AND AS PARENTS, NEXT FRIENDS, AND NATURAL GUARDIANS OF MICHAEL (BLU) GREEN DURING HIS MINORITY; AND MICHAEL (BLU) GREEN, INDIVIDUALLY

APPELLANTS

VS.

GEORGE'S FARMS, INC., GEORGE'S PROCESSING, INC.; PETERSON FARMS, INC.; SIMMONS FOODS, INC.; SIMMONS POULTRY, INC.; AND TYSON FOODS, INC.

APPELLEES

Opinion Delivered February 17, 2011

APPEAL FROM THE WASHINGTON COUNTY CIRCUIT COURT, NO. CIV 03-2150

HON. KIM SMITH, JUDGE

AFFIRMED.

COURTNEY HUDSON HENRY, Associate Justice

Appellants Mary E. Green and Michael B. Green, individually and as parents, next friends, and natural guardians of Michael Green during his minority, and Michael Green appeal the judgment entered by the Washington County Circuit Court in favor of appellees George's Farms, Inc., and George's Processing, Inc. (collectively "George"); Peterson Farms, Inc. (Peterson); Simmons Foods, Inc., and Simmons Poultry Farms, Inc. (collectively "Simmons"); and Tyson Foods, Inc. (Tyson). For reversal, appellants raise four issues contesting evidentiary rulings made by the circuit court and one point arising out of closing argument. Our jurisdiction is pursuant to Arkansas Supreme Court Rule 1-2(a)(7) because this

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is a subsequent appeal following one that was previously decided by this court. *See Green v. Alpharma, Inc.*, 373 Ark. 378, 284 S.W.3d 29 (2008) (*Green I*). We find no merit in the arguments raised and affirm.

I. *Factual Background*

Appellees are engaged in the poultry-production business in northwest Arkansas, including areas in the vicinity of Prairie Grove. As poultry producers, they provide and maintain ownership of the broiler hatchlings that they deliver to their respective growers. Appellees also supply the growers with medicine, and each furnishes the growers with feed, which they formulate according to their own unique specifications. For decades, their feeds have included the additive 3-Nitro, an FDA-approved product that is used to promote growth and prevent disease. Roxarsone, an organic derivative of arsenic, comprises twenty percent of the ingredients contained in 3-Nitro. Arsenic is recognized as a class-one carcinogen and is considered both a cancer-causing agent and a promoter of cancer. The roxarsone that is fed to the chickens degrades into an inorganic form of arsenic that is excreted by the chickens. Growers typically remove the chicken litter from poultry houses once a year, and the litter is applied as fertilizer to the fields surrounding Prairie Grove, including areas near the school campuses. The chicken litter is spread primarily in the spring and fall, commonly at a ratio of two tons per acre.

Appellant Michael Green, known as “Blu,” was born and raised in Prairie Grove in a neighborhood near the schools. In the fall of 1999, he experienced unexplained bruising, and

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doctors at Arkansas Children’s Hospital diagnosed him with a rare form of leukemia called chronic myelogenous leukemia (CML). In April 2000, Blu underwent a bone-marrow transplant in Seattle, Washington, where he remained in the hospital for two months. After receiving extensive and often debilitating treatment, he achieved remission in 2004. However, his long-term prognosis is considered guarded, and he suffers permanent complications from the treatment, including cataracts, problems with nail and hair growth, sterility, and an increased risk of skin cancers.

In December 2003, appellants filed a complaint against appellees and Alpharma, Inc., the manufacturer of 3-Nitro.¹ Seeking injunctive relief and both compensatory and punitive damages, appellants presented causes of action for negligence, negligence per se, intentional failure to warn, and strict products liability. As the basis for their complaint, they alleged that the arsenic-laced litter produced by roxarsone-fed chickens polluted the air in Prairie Grove as a result of ventilating the chicken houses, and the dust clouds formed when the litter is spread. Further, appellants asserted that Blu’s exposure to this inorganic arsenic caused his leukemia. In pretrial rulings, the circuit court granted summary judgment in favor of appellees on the issue of causation. Additionally, the court excluded all testimony pertaining to Table 9 of a report entitled “Exposures to Carcinogenic Arsenicals and Other Toxic Substances in Washington County, Arkansas,” prepared in 2005 by appellants’ expert, Dr. Rod O’Connor.

¹Other plaintiffs joined in the complaint, but the circuit court severed the claims of the other plaintiffs on motion of appellees and Alpharma. The claims of the other plaintiffs are still pending in the Washington County Circuit Court.

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In ruling this evidence inadmissible, the circuit court found that the methodology used by Dr. O'Connor did not meet the standards set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and *Farm Bureau Mutual Insurance Company v. Foote*, 341 Ark. 105, 14 S.W.3d 512 (2000).² The case proceeded to trial against Alpharma, Inc., and the jury returned a defense verdict.

Following the entry of judgment, appellants brought the first appeal of this matter, challenging the circuit court's decision granting summary judgment to appellees and its ruling to exclude any testimony based on Table 9 of Dr. O'Connor's report. In *Green I*, we overturned the circuit court's grant of summary judgment. Applying the test for establishing proximate causation in cases involving joint tortfeasors as enunciated in *Chavers v. General Motors Corporation*, 349 Ark. 550, 79 S.W.3d 361 (2002), we held that a question of fact remained on the issue of causation. *Green I*, 373 Ark. at 396, 284 S.W.3d at 42–43. However, we found no abuse of discretion in the circuit court's decision to exclude the testimony regarding Table 9. *Id.* at 408, 284 S.W.3d at 51.

On remand, the circuit court conducted a two-week jury trial that began on April 30, 2009. Following the presentation of appellants' case, the circuit court granted Peterson's

²The *Daubert* factors governing admissibility of expert testimony are (1) whether the scientific theory or technique can be or has been tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; and (5) whether the theory or technique has general acceptance in the community. *Daubert, supra*. We adopted these factors for analyzing the admission of expert testimony in *Farm Bureau Mutual Insurance Company v. Foote, supra*.

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motion for a directed verdict. The court also directed a verdict on the issue of punitive damages. After the remaining appellees mounted their defense, the jury found in favor of the appellees. Appellants now bring this second appeal, urging five points for reversal.

II. *Reconsideration of Ruling Regarding Table 9*

Prior to the instant trial, appellants filed a motion asking the circuit court to reconsider its previous decision, which denied the admission of testimony based on Table 9 of Dr. O'Connor's 2005 report. Noting that the lack of publication and peer review had influenced the circuit court's earlier decision, appellants asserted that Dr. O'Connor's work had since been peer reviewed and published in the July 2008 edition of the *Journal of Residuals Science & Technology* under the title "Estimation of Chronic and Acute Air Arsenic Levels from House Dust Composition in Poultry Waste Disposal Areas." Appellees responded to the motion and filed a joint motion in limine to prohibit the testimony. They argued that the law-of-the-case doctrine precluded reconsideration of this issue. In this regard, appellees asserted that the material facts had not changed in that the 2008 paper used the same methodology that the circuit court previously found unreliable. Appellees also maintained that the formula underlying Dr. O'Connor's calculations in Table 9, the use of which had been criticized by the circuit court, had not actually been subjected to peer review in the 2008 paper. Appellees also pointed out that Dr. O'Connor had altered certain values in his calculations without explanation and that he continued to disregard dust samples that were below detectable limits. In reply, appellants did not address the specific criticisms offered by appellees. They

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maintained only that the paper had been subjected to peer review and that the review detected no flaws in Dr. O'Connor's methodology.

The circuit court issued a written order denying appellants' motion for reconsideration. The court also entered an order granting appellees' motion in limine to exclude testimony regarding the 2008 article. The court found that the 2008 article utilized the same unreliable methodology to estimate peak air exposure concentration that it had previously ruled inadmissible, noting that its decision had been affirmed by this court on appeal. The circuit court also stated that the calculations were based on unreasonable assumptions and scientifically unsound mathematical extrapolations from dust samples collected in the Prairie Grove area and that Dr. O'Connor continued to use a formula that the EPA had warned should only be used to determine air levels of lead. The court found that the theory advanced in Table 9 had never been tested and still had not been tested by any other scientist. At trial, when appellants proffered the 2008 paper, the circuit court commented further that publication of the paper did not remove the doubts it previously had expressed about the methodology used in Dr. O'Connor's calculations. The circuit court also stated that "we had an agreement" that all reports and opinions of experts were to have been provided in 2006 so that the parties would have an opportunity to take depositions. The court said that, when the 2008 paper came to its attention, the defense did not have an opportunity to depose Dr. O'Connor.

As their first point on appeal, appellants argue that the circuit court erred by not

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allowing testimony concerning Table 9 to be introduced into evidence. They assert that the law-of-the-case doctrine does not bar admission of the table because the peer review and publication of the 2008 paper represents a significant change in circumstances. Appellants further contend that the relative strengths or weaknesses of Dr. O'Connor's methodology go to the weight and credibility of his opinions but not to their admissibility. Appellees respond that publication of the paper is not a material change in facts. They argue that the inhalation exposure reconstruction of Table 9 is not discussed in the 2008 article and that the article "carved out" from peer review the formula Dr. O'Connor used to make the calculations of Table 9. Appellees also point out that peer review and publication is only one factor in the *Daubert* analysis and that consideration of the remaining factors shows that the methodology utilized by Dr. O'Connor remains unreliable.

The doctrine of law of the case prohibits a court from reconsidering issues of law and fact that have already been decided on appeal. *Cadillac Cowboy, Inc. v. Jackson*, 347 Ark. 963, 69 S.W.3d 383 (2002). The doctrine provides that a decision of an appellate court establishes the law of the case for the trial upon remand and for the appellate court itself upon subsequent review. *Clemmons v. Office of Child Support Enforcement*, 345 Ark. 330, 47 S.W.3d 227 (2001). The law-of-the-case doctrine also prevents consideration of an argument that could have been raised at the first appeal and is not made until a subsequent appeal. *First Commercial Bank v. Walker*, 333 Ark. 100, 969 S.W.2d 146 (1998). The doctrine serves to effectuate efficiency and finality in the judicial process, and its purpose is to maintain consistency and avoid

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reconsideration of matters once decided during the course of a single, continuing lawsuit. *Jones v. Double “D” Props., Inc.*, 357 Ark. 148, 161 S.W.3d 839 (2004). However, the law-of-the-case doctrine is conclusive only where the facts on the second appeal are substantially the same as those involved in the prior appeal, and it does not apply if there was a material change in the facts. See *Weiss v. McFadden*, 360 Ark. 76, 199 S.W.3d 649 (2004).

The record reflects that Table 9 of Dr. O’Connor’s 2005 report included his calculations relating to inhalation exposure reconstruction that were based on a formula for converting measurements of arsenic in dust to measurements of arsenic in air. In *Green I, supra*, we affirmed the circuit court’s conclusion that the methodology used by Dr. O’Connor did not meet the *Daubert* standards for the admissibility of expert testimony. First, the formula he used was taken from a California EPA study that applied to lead, even though the study cautioned against using it for other substances. Dr. O’Connor also applied a conversion factor that differed from the one he used while testifying in another lawsuit. In addition, he used a variable as a mathematical assumption that he admitted could be incorrect. Based on these considerations, we held that the circuit court did not abuse its discretion in finding that Dr. O’Connor’s theory had not been tested. *Green I*, 373 Ark. at 403, 284 S.W.3d at 48. We also observed that the inhalation exposure reconstruction of Table 9 had not been subjected to peer review and publication. *Id.* at 404, 284 S.W.3d at 48. The potential rate of error had not been shown. *Id.* Moreover, the methodology failed the existence and maintenance of standards factor based on criticisms of Dr. O’Connor’s practice of disregarding dust samples

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that contained undetectable levels of arsenic when calculating average dust concentrations. *Id.* at 406, 284 S.W.3d at 50. Finally, we noted the absence of evidence showing general acceptance in the scientific community. *Id.* at 407, 284 S.W.3d at 50.

Appellants posit that publication and peer review of his methodology represent a material change in circumstances that would permit reconsideration of this issue. However, it is not apparent whether the inhalation exposure reconstruction reflected in Table 9 was indeed subjected to peer review in the 2008 article. Even so, in *Daubert, supra*, the Court observed that the “fact of publication (or lack thereof) in a peer reviewed journal thus will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised.” *Daubert*, 509 U.S. at 594. In our previous opinion, the absence of peer review and publication was but one factor in our overall assessment of the validity of Dr. O’Connor’s methodology. Given the serious flaws exposed in his methods, we are not persuaded that the publication of the article in a peer-reviewed journal constitutes a fact that is sufficiently material to overcome the law-of-the-case doctrine. Further, appellants’ argument that we should, in any event, allow the testimony because criticisms of his methods should only affect the weight but not the admissibility of the evidence is also barred by law of the case. This issue was not raised in the previous appeal, and we will not address it here. *See First Commercial Bank, supra* (law-of-the-case doctrine applies to issues that could have been but were not raised in a previous appeal).

III. *Refusal to Allow Dr. O’Connor to use the Cackle Corner Formula to Calculate a Dose*

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At trial, appellees relied on what is known as the Cackle Corner Study conducted by the National Institute of Occupational Safety and Health (NIOSH) in Valiant, Oklahoma. This study concluded that levels of arsenic in chicken litter did not exceed the exposure limits set by OSHA. During Dr. O'Connor's testimony, appellants attempted to have him apply the mathematical formula used in the Cackle Corner Study to calculate air concentration based on the dust concentration measurements he obtained from samples taken in Prairie Grove. The circuit court disallowed the testimony because the calculations were not included in Dr. O'Connor's report.

In this appeal, appellants contend that, had Dr. O'Connor been allowed to use the formula, his testimony would have shown that the concentration of arsenic in the air surrounding the Greens' home was more than double the workplace limit for a fifteen minute exposure for an adult set by NIOSH. Appellants argue that the circuit court abused its discretion by not allowing Dr. O'Connor to educate the jury on this matter. However, the circuit court did not permit this testimony because it had not been disclosed in advance of trial. Conspicuously absent from appellants' argument is any direct attack on the circuit court's reasoning behind its ruling. Thus, we are precluded from considering appellants' claim of error. Addressing a challenge to the exclusion of O'Connor's testimony would require this court to develop an argument on appellants' behalf challenging the basis of the circuit court's decision. However, it is not the duty of this court to research or develop arguments for an appellant on appeal. *McNeil v. Weiss*, 2011 Ark. 46, ___ S.W.3d ___; *McDermott v. Sharp*, 371

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Ark. 462, 267 S.W.3d 582 (2007).

IV. *Exclusion of Evidence Concerning Other Cancers*

In August 2006, the circuit court ruled that witnesses could discuss that there were three other incidents of leukemia in Prairie Grove but that evidence would not be allowed concerning persons living in the area who had other forms of cancer. The court reasoned that the issue in the case at bar was whether Blu's exposure to inorganic arsenic caused his particular variety of cancer and that evidence of other cancers was not relevant and that the prejudicial effect of the evidence exceeded its probative value. The circuit court also severed the cases of the other plaintiffs based on the same analysis. Appellants did not challenge the circuit court's ruling limiting the evidence to other incidents of leukemia in the previous appeal.

On remand, appellants petitioned the circuit court to revisit its decision to exclude evidence of other cancers in light of a 2008 article published in *Environmental Health Perspectives* entitled "Angiogenic Potential of 3-Nitro-4-Hydroxy Benzene Acid (Roxarsone)." According to appellants, this article was "new evidence," and it stated that roxarsone, an organic form of arsenic, as well as inorganic arsenic III, promotes angiogenesis, a process described as a fundamental step in the transition of tumors from a dormant to malignant state by generating new blood vessels that supply blood to a solid tumor. Appellants included an affidavit of Dr. James Dahlgren, who averred that the literature documented that organic arsenic is a potent inducer of angiogenesis. He also opined that evidence showing that

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individuals in Prairie Grove suffered from different types of cancer supports the position that arsenic was the cause of the cancers.³ Appellees responded that the law-of-the-case doctrine precluded consideration of the issue. The circuit court denied appellants' motion to reconsider this issue.

On appeal, appellants contend that the 2008 study is new evidence such that law of the case does not prohibit reconsideration of the decision to exclude evidence of other cancers. As previously noted, the law-of-the-case doctrine prevents consideration of an argument that could have been raised at the first appeal and is not made until a subsequent appeal. *McDonald's Corp. v. Hawkins*, 319 Ark. 1, 888 S.W.2d 649 (1994). This rule prevails unless it is shown that there has been a material change in facts. *See Weiss, supra*. Although appellants tout the 2008 study as being a change in facts, evidence that roxarsone, or organic arsenic, promotes cancer is not germane to the issue of whether evidence of other cancers is relevant in a case involving leukemia. Thus, we fail to perceive how the study has any bearing on the circuit court's initial ruling that evidence of other cancers was simply not relevant. Appellants did not raise the exclusion of this testimony in the first appeal, and they have not shown that the facts have materially changed. Therefore, we find no abuse of discretion in the circuit court's decision.

V. *Pilkington Email*

³The other childhood cancers that developed between 1993 and 2002 included two cases of lymphoma, one case of liver cancer, one brain cancer and one brain tumor, one case of myeloma, and three cases of testicular cancer.

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At trial, appellants sought to introduce an email written to an Alpharma employee by Patrick Pilkington, who had served as a supervisor of veterinarians and nutritionists at Tyson. In the email, Pilkington asked Smith to prepare a short paper defending the use of 3-Nitro. As it had done in the previous trial, the circuit court excluded the email on grounds of relevance because, placed in context, the email dealt with a concern about arsenic in chicken tissue, not arsenic in chicken litter.

On appeal, appellants argue that the email was relevant because it proved that Tyson had knowledge of arsenic's dangerous propensities, and thus supported their claim that Tyson was negligent in failing to warn of the danger.⁴ Because appellants did not raise this argument in the first appeal, law of the case prevents them from raising the issue in this appeal. *First Commercial Bank, supra*.

VI. Closing Argument

During closing argument, counsel for Simmons stated the following:

Roxarsone has been in [feed] for over fifty years, as you've been told and will be told again, as you surely know now, and as Mr. Bassett told you, there's nothing unique about Prairie Grove, Arkansas. Whether you want to talk about Gentry, my home town of Siloam Springs, Decatur, Lincoln, Cane Hill, chicken litter is spread in the spring and in the fall on fields in close proximity to each of those towns and communities in northwest Arkansas and has been for fifty years. Where are the sick people? Where are the sick people?

Appellants take issue with counsel's query about the absence of evidence showing that

⁴At trial, appellants also argued that Pilkington had "opened the door" for this email to be admitted into evidence. However, on appeal they do not advance the argument that the email was admissible on that basis.

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other persons had become ill due to roxarsone. Appellants contend that the statement was disingenuous in light of the fact that appellees succeeded in excluding evidence of other cancers in the Prairie Grove area. Appellants, however, raised no objection to counsel's argument at trial. This court has repeatedly held that we will not address an argument raised for the first time on appeal. *Whiteside v. Russellville Newspapers, Inc.*, 2009 Ark. 135, 295 S.W.3d 798. Accordingly, we do not address this point on appeal.

Affirmed.