On some papers about varieties and quasivarieties of centrally nilpotent loops

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Abstract

This paper specifies and often corrects the gross mistakes, incorrect, erroneous and senseless statements that can be found practically in all published works of V. Ursu and A. Covalschi. It also specifies numerous cases of plagiarism.

Key words: commutative Moufang loop, Moufang loop, A-loop, nilpotent loop, nilpotent loop of class 2, variety, quasivariety, basis of identities, basis of quasiidentities, separable loop, lattice, covering.

Mathematics of subject classification: 17D05, 20N05.

1 Preliminaries

This paper analyzes all works of V. Ursu and A. Covalschi. Ideologically, this paper is similar to papers [44], [45]. All analyzed works of the given paper are not scientific, their results are erroneous, similarly to all works analyzed in [44], [45], which are full of plagiarism.

One of the basic working concepts studied in the analyzed papers is the notion of centrally nilpotent loop. This notion for loops on the basis of nilpotency for groups is developed and investigated in details by R. Bruck [2], [3] with the help of upper central series.

The theory of centrally nilpotent loops essentially differs from the theory of nilpotent groups. In some of his papers, [42], [40, pag. 378], [38], [14], [15] and other, Sandu offers methods to research centrally nilpotent loops, distinct from [2], [3]. They are systematized in [14] and [15], see also [46]. The notions of commutators, of commutators of weight n, of lower central series, of upper central series etc. for groups are replaced by the notions of commutator-associator, of commutator-associators of weight n, of lower central series, of upper central series etc. for loops respectively. Particularly, (äŕĺňń˙) it is given the structural construction of members of lower central series with the help of commutator-associators of type (α, β) [14], [15], [46].

From the analyzed papers it follws that V. Ursu assumes these above-listed notions and results to him, but failing to understanding their meaning. As a result, when applying them for his researches, he makes gross mistakes and comes up with incorrect statements. Let's look at an example. For loops (in particular, for A-loops) and Moufang loops the lower central series are characterized in different ways which are equivalent with Bruck's notions. V. Ursu has not understood even this equivalence.

The analyzed works investigate the commutative Moufang loops (which by Bruck-Slaby's Theorem [3] are locally central nilpotent), the basis (minimal, independent, non-idependent) of identities, quasiidenties of various varieties, quasivarieties of commutative Moufang loops, of centrally nilpotent (of class 2) of Moufang loops or A-loops. They also investigate the lattices of such varieties, quasivarieties. The basic method of researches for almost all analyzed works is the following. The above-mentioned questions, solved for groups, are transferred mechanically on the above-mentioned classes of loops. These transfers are made with gross mistakes. The main reason: the authors do not understand and not take into account the elementary properties of the statements proved for groups. The Mal'cev's results are plagiarized roughly: almost the entire work [64], [63].

Many gross blunders from the analyzed papers are corrected in various items of this paper, if it is meaningful. The items $1a) - 1o)$, $2a) - 2o)$ show falsity of the main results of papers [56], [16]. Paper [46], which is a natural continuation of this paper, proves that the variety generated by a centrally nilpotent Moufang loop (or centrally nilpotent A-loop) is finitely based. The main results of papers [56], [16] are proved wrongly.

In the end, the paper contains a scheme of conformity of the items stated below to the works from the List of References.

2 On basis of identities of nilpotent Moufang loops or A-loops

$1a)$. Combining techniques used by Lyndon [30] in showing that the identities of a nilpotent group are finitely based with some related ideas of Higman [25] and the results of Bruck [3] on the structure of commutative Moufang loops to prove [18] the following properties of a finitely generated commutative Moufang loop: (i) its identities are finitely based, (ii) it can be finitely presented, (iii) it is residually finite, and (iv) it has a solvable word problem.

$1a_1)$. The contents of item $1a)$ is the begin of paper [18], i.e. in [18] are mentioned the papers [30], [25] and [3].

$1a_2$). In work [56] it is considerate same properties (i) – (iv) of a finitely generated centrally nilpotent Moufang loop. The structure of work, the techniques and the ideas used in [56] are a complete analog of paper [18]. In [56] it is not marked. It is follows that all this the author of [56] appropriates itself.

$1a_3$). A basic notions and properties used in [56] for researches of properties (i) – (iv) of nilpotent (centrally nilpotent) Moufang loop are the notions of associator commutator of weight $n \geq 1$, of lower central series, of maximum condition for subloops and others, them properties. The author of [56] appropriates them to itself. But it does not correspond the validity. In this occasion see the item $1b_4$).

$1b$). We pass to analysis the work [56]. Literally we expose.

$1b_1$). An algebra $(L, \cdot, ^{-1})$ of type $< 2, 1 >$ is called a Moufang loop if

$$xy \cdot zx = x(yz) \cdot x \tag{1}$$

$$y^{-1} \cdot yx = x = xy \cdot y^{-1}. \tag{2}$$

In [3] a Moufang loop is defined as a loop with one binary operation $< \cdot >$ satisfying the identity (1), and in such a loop any element has an inverse x^{-1} such that (2) holds as well. We show that the groupoid $(L, \cdot)$ of the algebra $(L, \cdot, ^{-1})$ with identities (1) and (2) is a Moufang loop in the sense of the last definition.

All we need now is to show that each of the equations $ax = b$, $ya = b$ has a unique solution in $(L, \cdot)$. It is evident from (2) that these solutions are $x = a^{-1}b$ and $y = b^{-1}a$.

$1b_2$). In item $1b_1$) the reference on [3] not corresponds to the validity, see pages 58, 110, 115. The groupoid $(L, \cdot)$ is not a loop. From identity (2) it follows that $x = a^{-1}b$ and $y = b^{-1}a$ are a solutions of equations $ax = b$, $ya = b$. that they were an unique solutions of identities (1) and (2) it is necessary to the identities $y \cdot y^{-1}x = xy^{-1} \cdot y = x$ or $(x^{-1})^{-1} = x$, or the condition that $x \to x^{-1}$ is an one-to-one mapping "on".

$1b_3$). Let L be a Moufang loop. The associator-commutator of weight n of elements of a nonvoid set $M \subseteq L$ is defined by induction. Any element of M is an associator-commutator of weight 1; if a is an associator-commutator of weight n and $b, c \in M$, then the associator $[a, b, c] = (a \cdot bc)^{-1} \cdot (ab \cdot c)$ and the commutator $[a, b] = (ba)^{-1} \cdot ab$ are an associator-commutator of weight $n + 1$.

Let us recall from [3] the following definitions. A subloop H of the Moufang loop L is called *normal* in L if $aH = Ha$, $a{\cdot}bH = ab{\cdot}H$ for any a, b from L. The series of subloops $L = L_1 \supset L_2 \supset \ldots$, where L_i is a normal subloop generated by the associator-commutator of weight i is called the *lower central series* of the Moufang loop L. The subloop L_2 (generated by associators the and commutators from L) is called the *associator-commutator* subloop of the Moufang loop L, and sometimes is denoted by $A(L)$. By the center of the Moufang loop L we mean the set

$$Z(L) = \{a \in L | [a, b, c] = [a, b] = 1 \text{for all} \quad b, c \in L\}.$$

The normal subloops are defined inductively by

$$Z_1 = Z(L), \quad Z_i(L)/Z_{i-1}(L) = Z(L/Z_{i-1}(L)) \text{for} \quad i \geq 1.$$

A Moufang loop L is called *nilpotent of class* n if $L_{n+1} = \{1\}$, $L_n \neq \{1\}$ or, equivalently, $Z_n(L) = L$, $Z_{n-1} \neq L$.

$1b_4$). From item $1b_3$) it follows that the notions of associator-commutator of weight i, of lower central series of the Moufang loop L are defined by author of [56], i.e. appropriates to itself. But it does not correspond the validity. Reference on [3] in item 1b) is not correct. The notions of associator-commutator of weight i and lower central series are defined in many Sandu's papers, see, for example, [42], [40, pag. 378], [38]. Confirms said and designation $A(L)$. Moreover, a centrally nilpotent loop is defined in [3] as $Z_n(L) = L$, $Z_{n-1} \neq L$. The equivalence of this definition with $L_{n+1} = \{1\}$, $L_n \neq \{1\}$ is proved, for example, in mentioned Sandu's papers.

In a Moufang loop the following relations hold:

$$xL_{z,y} = x[x, y, z]^{-1}, \tag{3}$$

$$xyL_{z,t}[z^{-1}, t^{-1}] = xL_{z,t} \cdot yL_{z,t}[z^{-1}, t^{-1}], \tag{4}$$

$$xtT_z z^{-3} = xT_z \cdot yT_z z^{-3}, \tag{5}$$

$$y \cdot xL_{z,y} = yx \cdot [y, x, z]. \tag{6}$$

To prove our main result we need the following results.

1c). LEMMA 2.1 *Let L be a Moufang loop, k a positive integer such that $a, b \in L_k$ and $c, d, e \in L$. Then*

$$[a, c, d] \equiv [c, d, a] \equiv [d, a, c] (\text{mod} L_{k+2}), \tag{7}$$

$$[a, c, d] \equiv [c, a, d]^{-1} \equiv [a, d, c]^{-1} (\text{mod} L_{k+2}), \tag{8}$$

$$[a, c, d \cdot e] \equiv [a, c, d][a, c, e] (\text{mod} L_{k+2}), \tag{9}$$

$$[ab, c, d] \equiv [a, c, d][b, c, d](\text{mod} L_{k+2}), \tag{10}$$

$$[a^p, c^q, d^r] \equiv [a, c, d]^{pqr}(\text{mod} L_{k+2}), \tag{11}$$

$$[ab, c] \equiv [a, c][b, c][a, b, c]^3(\text{mod} L_{k+2}), \tag{12}$$

$$[a, cd] \equiv [a, c][a, d][a, c, d]^{-3}(\text{mod} L_{k+2}), \tag{13}$$

$$[a, [c, d]] \equiv [a, c, d]^{-6}(\text{mod} L_{k+2}), \tag{14}$$

where p, q, r are integer numbers.

$1c_1$). From definition of normal subloop L_i it follows that $[a, c, d] \in L_{k+1}$ and $[c, d, a], [d, a, c], [c, a, d] \in L_2$ for $a \in L_k$, $c, d \in L = L_1$. From identity $[x, y, z] = [xy, z, y^{-1}]$ [3, Lemma 5.4] it follows that $[a, c, d]^{-1} \in L_2$. From here it follows that the relations (7), (8) are false.

$1d$). *Proof.* According to (3) and (6) $c \cdot a[a, c, d]^{-1} = ca \cdot [c, a, d]$, hence $[a, c, d]^{-1} \equiv [c, a, d](\text{mod} L_{k+2})$, and so $[c, a, d] \in L_{k+2}$. By the definition of associator, $ca \cdot d = (c \cdot ad)[c, a, d]$, and therefore $d^{-1}a^{-1} \cdot c^{-1} = [c, a, d](d^{-1} \cdot a^{-1}c^{-1})$.

Since $[c, a, d] \in L_{k+1}$, we have $(d^{-1} \cdot a^{-1}c^{-1})[d^{-1}, a^{-1}, c^{-1}] \equiv (d^{-1} \cdot a^{-1}c^{-1})[c, a, d](\text{mod} L_{k+2})$, hence $[c, a, d] = [d^{-1}, a^{-1}, c^{-1}](\text{mod} L_{k+2})$.

So, we obtain $[a, c, d] \equiv [c, a, d]^{-1} = [d^{-1}, a^{-1}, c^{-1}]^{-1}(\text{mod} L_{k+2})$.

$1d_1$). The exposed proof from item 1d) is false. We mentioned only the inaccuracy of assertion $[c, a, d] \in L_{k+1}$ which is mentioned in â item $1c_1$).

1e). According to (4), we have $deL_{a,c} \cdot [a^{-1}, c^{-1}] = dL_{a,c} \cdot eL_{a,c}[a^{-1}, c^{-1}]$, and, using (3) $(de \cdot [de, c, a]^{-1}[a^{-1}, c^{-1}] = d[d, c, a]^{-1} \cdot (e[e, c, a]^{-1} \cdot [a^{-1}, e^{-1}])$. Therefore $[de, c, a] = [d, c, a] \cdot [e, c, a](\text{mod} L_{k+2})$. According to (7) and (8), we obtain (9).

$1e_1$). From items $1c_1$), $1d_1$) it follows that the relation (9) not is proved.

$1e_2$). The relation (9) essentially is used for prove (10), the relation (10) essentially is used for prove (11), the relation (11) essentially is used for prove (12). Consequently, the relations (10) – (12) not is proved also.

Similarly, using the commutator identity $[x, y] = [y, x]^{-1}$, which is true in any Moufang loop, we can prove (13). Finally, by (13), (8), (9) and (11) we have ... and (14) follows.

$1e_3$). From above-stated it follows that the Lemma 2.1 is complete false and it proof is a senseless.

$1f$). LEMMA 2.2 *Let the Moufang loop L be generated by the set M. Then the factor-loop L_n/L_{n+1} is generated by those conjugacy classes which contain associator-commutattors of weight n of elements of M.*

$1f_1$). *Proof* ...By definition L_n is generated by the elements $[x, y, z]$, $[x, y]$, where $x \in L_{n-1}$, $y, z \in L$. ...

$1f_2$). After using several times the relations from Lemma 2.1, we see that ... the proof is complete.

f_3). The assertion from item $1f_1$) is false. Correctly: by definition L_n is generated as normal subloop of loop L by the elements $[x,y,z]$, $[x,y]$, where $x \in L_{n-1}$, $y,z \in L$. In such case L_n is generated as subloop by by the elements $\varphi[x,y,z]$, $\psi[x,y]$, where $\varphi, \psi \in I(L)$ - the group of inner mappings of loop L, according to [3, pag. 63].

$1g$). THEOREM 2.3 *Any finitely generated nilpotent Moufang loop L satisfies the maximality condition for subloops.*

$1g_1$). *Proof.* ... According to Lemma 2.2 , every factor L_i/L_{i+1} is a finitely generated Abelian group. ...

$1g_2$). Is absolutely not clear the statement from item g_1) . The Theorem 2.3 not is proved.

$1h$. COROLLARY 2.4 *A finitely generated nilpotent Moufang loop is finitely representable.*

$1h_1$). From items $1f_2$), $1e_3$), $1f_3$), $1g_2$) it follows that the proofs of Lemma 2.2, of Theorem 2.3, of Corollary 2.4 are false, are a senseless.

$1i$). LEMMA 3.2 *Every periodic local nilpotent Moufang loop is locally finite.*

$1i_1$). In proof of Lemma 3.2 essential is used the Theorem 2.3. Them from item $1g_2$) it follows that the Lemma 3.2. not is proved.

$1j$). LEMMA 3.3 *Let L be a finitely generated nilpotent Moufang loop and let $Z(L)$ be its centre. Then $L/Z(L)$ is finite if and only if the associator-commutatur subloop $A(L)$ is finite.*

$1j_1$). In proof of Lemma 3.2 essential are used the Theorem 2.3, the Lemma 3.2 and false identity (11) under $r \neq 1$. Them from items g_2) and h_1) it follows that the Lemma 3.2. not is proved.

$1j_2$). The Lemma 3.3 and its proof are a mechanical carry of corresponding result [41, Lemma 3] for commutative Moufang loops. In [56] about it it is not marked.

$1k$). THEOREM 3.4 *A finitely generated nilpotent Moufang loop L is residually finite.*

$1k_1$). *Proof.* We use induction on the class of nilpotency n. ... Let $a \in A(L)$. By hypothesis, there is a normal subloop N of finite index s in $A(L)$ not containing a. ...

$1k_2$). In proof of Theorem 3.4 are used essential are used the Theorem 2.3 and the Lemmas 3.2, 3.3. From items g_2), h_1) and $1j_1$) it follows that the Theorem 3.4 not is proved.

$1k_3$). The last assertion from item $1k_1$) is not obvious, it is necessary to prove it. More particularly, it is necessary to show that if L is a nilpotent of class $n > 2$ Moufang loop then the ssociator-commutatur subloop $A(L)$ is nilpotent of class $< n$ (strictly). In this occasion see [42, Lemma].

$1k_4$). For commutative Moufang loops the Theorem 3.4 is proved in [43]. It in [56] is not marked.

$1k_5$). In general, all analyzed results, except for false Lemma 2.2, are a mechanical and as have shown unsuccessful carry of results for commutative Moufang loops from Sandu's papers on centrally nilpotent Moufang loops. In [56] it is not marked About it, disappears. It confirms also designation $A(L)$. In Sandu's papers $A(L)$ means the associator subloop of loop L and for commutative Moufang loops $A(L)$ turns in commutator-associator subloop.

$1l$). The following Theorem 4.6 is the main results of paper [56] which for commutative Moufang loops is proved in [18]. At the proof it result [18, Theorem III] essentially are used the assertions:

a) The set of all nilpotent of class $\leq n$ commutative Moufang loops forms a variety which is defined by identity $((x_1, x_2, x_3), x_4, \dots, x_{2n+1}) = 1$, where $(x, y, z) = (xy \cdot z)(x \cdot yz)^{-1}$. It identity is equivalent with condition $L_n = \{1\}$, where L_n means the associator subloop of lower central series;

b) a fully invariant subloop of free commutative Moufang loop F is normal in F as the inner mappings of a commutative Moufang loop are automorphisms. Then if W is a word subloop, generated by all values of some given set of words, then W is a normal subloop and F/W is free in the subvariety defined by the identities $w = 1$, for w in the given set of words.

$1m$). THEOREM 4.6 *The variety generated by a nilpotent Moufang loop is finitely based.*

$1m_1$). The proof of Theorem 4.6 is erroneous, is a senseless. It is mechanical almost literal carry of proof of [18, Theorem III]. Almost literal is to hide incompetence and ignorance of many facts from theory of varieties of algebras. We confirm briefly it.

$1m_2$). Are essentially used not proved Lemmas 2.1, 2.2, Theorem 4.3. A some identities of Lemma 2.1 are false.

$1m_3$). In view of incompetence are ignored the corresponding assertions from item b) of $1l$). In particular, is not given reason use the free Moufang loop on a countably infinite set of free generators.

$1m_4$). The author compensates the incompetence of similar assertions from item b) of $1l$) by using Lemmas 4.2, 4.3 instead of the analogous Lemmas 3, 4 from [18]. They are copied without references from [44], Propositions 5. 6. This resulted in mistakes.

$1n$). Finally, we cite literally.

$1n_1$). By McKinsey [34], using Theorems 3.4 and 4.6 we obtain

$1n_2$). Corollary 4.7 *Any nilpotent variety of Moufang loops has decidable quasiequational theory.*

$1n_3$). *Remark.* Assume that a loop L is defined in a nilpotent variety $\mathcal{M}$ of Moufang loops by an infinite (or infinite) number of generators $x_1, x_2, \ldots$ and a finite collection of relations $u_1 = 1, \ldots, u_n = 1$, where the h_i are words of type $< \cdot, ^{-1} >$ over the generators. The word problem consists in defining an algorithm for validity of the equality $u = 1$ in L, where u is a word of type $< \cdot, ^{-1} >$ over $x_1, x_2, \ldots$ Since the validity of the equality $u = 1$ in L is equivalent to the validity of the quasiidentity $u_1 = 1, \ldots, u_n = 1 \Rightarrow h = 1$ in all loops of the variety $\mathcal{M}$, by Corollary 4.7 we see that the word problem for finitely presented nilpotent Moufang loops is decidable.

$1n_4$). From items $1n_1$), $1k_2$), $1m_1$) – $1m_4$) it follows that the validity of Corollary 4.7 is not proved. The McKinsey's result, published in 1943, is used in a strange manner. The definition of decidable quasiequational theory is missing.

$1n_5$). From item $1n_4$) it follows that item $1n_3$) does not give any answer regarding the word issue for finitely presented nilpotent Moufang loops.

$1n_6$). Actually items $1n_1$) – $1n_3$) were plagiarized. In a bit confusing form, but almost literally the author V. I. Ursu assumed to himself the Mal'cev's result from [32, Section 7], where it is shown that the word problem has a positive solution for finitely presented algebras.

$1o$). Taking into account the above-stated we conclude that the proofs of all statements and all results from paper [56] are often erroneous and false. Moreover, the author Ursu V. I. assumes to himself the basic working notions and the results of other authors, see, for example, items $1b_4$), $1j_2$), $1k_4$), $1n_6$). The work [56] is anti-scientific. Questions arise: what circumstances contributed to the publication of such a work and what has the author hoped for when publishing such a work?

$2a$). Paper [16] deserves the same appraisal as item $1o$) from [56], or even worse.

$2a_1$). [16] investigates the same questions as [18] and by item $1a_2$),it investigates the same questions as [56]. With respect to the techniques and methods used to investigate these questions, paper [16] is a literal copy of [56] and by item $1a_2$), it is a copy of [18]. [16] does not refer to these literal similarities.

$2b$). To hide the similarities specified in item $2a_1$) the authors of [16] used the following.

$2b_1$). Replaced the standard terminology "set of identities" by an equivalent notion of "equational theory".

$2b_2$). Similarly to items $1a_3$), $1b_4$), the authors of [16] assumed to themselves others' notions and results. For that see item $2e_1$).

$2c$). We cite the quotes of items $2c_1$), $2c_2$), $2d$), $2d_1$), $2e$).

$2c_1$). For all the necessary notions and results from loop theory see [1], [3].

$2c_2$). A *loop* is called an algebra L with multiplication operation and two division operations $/$, $\backslash$, where such an element $e \in L$ exists that for all $x, y \in L$ the following equalities hold

$$ex = xe = x; \quad xy)/y = y\backslash(yx) = (x/y)y = y(y\backslash x) = x.$$

Further element e will denote the unit of loop, and $x^{-1} = e/x$.

$2c_3$). The definition of Moufang loop from item $1b_1$) is erroneous by item $1b_2$). Similarly, the definition of loop from item $2c_2$) is erroneous. This definition is not algebraic. With such a definition the totality of all loops does not form a variety.

$2c_4$). By [4] every A-loop is power-associative. Then $x^{-1}x = xx^{-1} = e$.

$2d$). Let L be a loop. The element $(x, y, z) = x\backslash((xy \cdot z)/(yz)$ is called a *left associator*, and the element $[x, y, z] = ((xy)\backslash(x \cdot yz))/z$ is called a *right associator* of elements $x, y, z \in L$. The element $[x, y] = x/(y/xy)$ is called commutator of elements $x, y \in L$.

$2d_1$). For every subset X of loop L by $[X, L]$ we denote the subloop in L generated by set

$$\{[x, y], [z, y, x], (x, y, z) | x \in X, y, z \in L\}.$$

Let H be a subloop of loop L. The set $[H, L]$ will called a *commutator* or *commutator subloop* of subloop H in loop L. Particular, $[L, L]$ is called *commutator* or *associant-commutant* or *derivable* of loop L. Sometimes the commutator $[L, L]$ will be denoted as L'.

$2e$). Let $L^{(0)} = L$ and $L^{(i+1)} = [L^{(i)}, L]$, $i < \omega$. Then the descending series

$$L = L^{(0)} \supseteq \ldots L^{(n)} \supseteq \ldots$$

is the upper central series of an A-loop L. L is *centrally nilpotent* or *nilpotent* if $L(n) = \{e\}$ for some $n < \omega$.

$2e_1$). This item is similar to items $1a_2$) and $1b_4$). The basic working notions and properties used in [16] to research the nilpotent A-loops are the notions of left associator, of right associator, of commutator of elements of an A-loop L defines in item $2d$) and the definition of subset $[X, L]$, the equivalent property of nilpotent loop marked in items $2d_1$), $2e$).

The authors of [16] assume to themselves the definitions and properties listed in $2d$), $2d_1$), $2e$). But this is not true. Similarly to item $1b_4$) the above listed notions and properties are introduced and proved in Sandu's works, for example, [42], [40, pag. 378], [38]. To hide this deceit the authors of [16] changed the terminology of these notions: the notion of associator of type α was replaced by notion of right associator; the notion of associator of type β was replaced by notion of left associator; the notion of commutator-associator subloop was replaced by notion of commutator and others.

$2f$). The Lemmas 2.1 – 2.3 and Corollary 2.4 are used essentially to prove the main result of [16]. Similarly to items $1e_1$) – $1e_3$) the proofs of the listed statements are erroneous, are completely senseless.

$2f_1$). To analyze the assertions from item $2f$) the following result from [28] will be used.

$2g$). **Corollary 1.** *For an A-loop L, the following are equivalent:*

1. L has the inverse property, i.e. $x^{-1}(xy) = y$ *and* $(xy)y^{-1} = x$ *for all* $x, y \in L$;

2. L has the alternative property, i.e. $x(xy) = x^2y$ *and* $(xy)y = xy^2$ *for all* $x, y \in L$;

3. L is diassociative;

4. L is a Moufang loop.

$2g_1$). LEMMA 2.1. *Let L be an A-loop, n a positive integer such that* $x, y \in L$ *and* $a \in L^{(n)}$. *Then:*

$$[a, x, y] \equiv (a, x, y)^{-1}(\text{mod}L^{(n+2)}, \tag{2.1}$$

$$[x, a, y] \equiv (x, a, y)^{-1}(\text{mod}L^{(n+2)}, \tag{2.2}$$

$$[x, y, a] \equiv (x, y, a)^{-1}(\text{mod}L^{(n+2)}, \tag{2.3}$$

$2g_2$). PROOF. The elements

$$(a, x, y), \quad (x, a, y), \quad ,(x, y, a), \quad [a, x, y], \quad [x, a, y], \quad ,[x, y, a]$$

belong to centre $Z(L/L^{(n+2)})$ of quotient loop $L/L(n+2)$, ...

$2g_3$). From the definition of set $[X, L]$ from item $2d_1$) and definition of lower central series from item $2e$) it follows that $(x, a, y), (x, y, a), [a, x, y]$, $[x, a, y] \in L^{(1)}$. Moreover, from item $2e$) it follows that the listed associators are not connected directly with the definition of subloop $L^{(n+2)}$. Hence for $n > 1$ the Lemmas 2.1 – 2.3 and the Corollary 2.4 are not proved, are false.

$2h$). **LEMMA 2.2.** *For any A-loop L and any elements* $x, y \in L$, $a, b \in L^{(n)}$ *the following relations hold:* ... PROOF ...

$2h_1$). …and similar, $xy \cdot [xy, a] = (xy)T_a = xT_a \cdot yT_a = x[x, a] \cdot y[y, a] \equiv (xy \cdot [x, a][y, a] \mod L(n+2)$.

$2h_2$). …as $a, z] = [z, a]^{-1}$ for all $z \in L$.

$2h_3$). …hence $[a^{-1}, x] \equiv [a, x]^{-1} \mod L(n+2)$. Used the similarly reasonings we get the relation $a, x^{-1}] = [a, x]^{-1}$.

$2h_4$). The relation from item $2h_1$) was proved by using that $[a, x]$, $[b, x] \in Z(L/L^{(n+2)}$. But by analogy with item $2g_3$) it is not always correct.

$2h_5$). The relations from items $2h_2$), $2h_3$) are connected with equivalent statements from item $2g$). If the loop L is not Moufang, then the relations from items $2h_2$) and $2h_3$) is not proved.

$2h_6$). Consequently, the relations of Lemma 2.2 are not proved, some of them are false.

$2i$). **LEMMA 2.3.** *For any A-loop L and any elements $x, y \in L$, $a, b \in L^{(n)}$ the following relations hold:* …PROOF …

$2i_1$). According to relation $[a, x] = [x, a]^{-1} \mod L(n+2)$ we have … from here

$$(x, a, y)[a, x, y][x, y, a] \equiv e \mod L(n+2).$$

By (2.1) and (2.3) we get

$$(x, a, y) \equiv [a, x, y]^{-1}[x, y, a]^{-1} \equiv (a, x, y)(x, y, a) \mod L(n+2).$$

$2i_2$). Similar is proved and relations

$$(xy, a, z) \equiv (x, a, z)(y, a, z) \mod L(n+2), \tag{2.22}$$

$$(xy, z, a) \equiv (x, z, a)(y, z, a) \mod L(n+2). \tag{2.23}$$

$2i_3$). To pass from the first equivalences to the second in item $2i_1$) it is necessary to use the property that L is a Moufang loop from item $2e_1$). But it is not always possible.

$2i_4$). The relations from item $2i_2$) are connected with remarks from item $2g_3$).

$2i_5$). According to items $2i_3$) and $2i_4$) we conclude that the relations of Lemma 2.3 are not proved, many from them are false.

$2j$). From Lemmas 2.1, 2.3 follows the Corollary 2.4.

$2j_1$). From items $2g_3$), $2i_5$) it follows that Corollary 2.4 is not proved, it is false.

$2k$). From items $2g_3$), $2i_5$) and $2j_1$) it follows that the relations of Lemmas 2.1 – 2.3 and Corollary 2.4 are not proved, many from them are false.

Moreover, their proofs are not mathematical, but rather a complete non-sense.

$2l$). Others assertions from paper [16]: the Lemmas 2.5, 3.1 – 3.3, 4.1 – 4.4, the Theorems 2.6, 3.4, 4.6, the Corollaries 2.7, 4.5, 5.1 – 5.5 literally coincide with the corresponding statements from [56]. Thus there are only such distinctions.

$2l_1$). Modification from item $2b_1$) is used.

$2l_2$). For A-loop left or right associators, defined in item $2d$), are used instead of the associator for Moufang loop defined in item$1b_3$).

$2l_3$). For Lemma 3.1 the n-th right power x^n of element $x \in L$: $x^n = ((\ldots((x \cdot x) \cdot x) \ldots) \cdot x)x$ (n steps) is defined. By [4] every A-loop L is power-associative, i.e. every element in L generates an associative subloop. Hence the defined notion of right power is without sense.

$2m$). Clearly, all of the above-mentioned mistakes and all non-senses for Moufang loops in [56] hold for A-loops considered in [16].

$2n$). Items $2k$) and $2m$) confirm the estimation and the characteristic from item $2a$) for [16].

$2o$). In papers [14], [15] is specified on wrongly and anti-scientific character of works [16], [56].

3 On V. Ursu and A. Covalschi compositions

$3a$). The main result of work [62] is the following statement.

$3a_1$).**Theorem 1.** *A quasivariety of commutative Moufang loops is solvable, i.e. to contain only solvable loops, if and only if each of its loops is different from its associator.*

$3b$). Before analyzing the proof of Theorem 1 we cite the quotes $3b_1$), $3c$), $3d$), $3e$) – $3e_3$).

$3b_1$). Now we will make an overview of some notions connected with Moufang loops, some of which may be found in [3] or [1].

$3c$). An algebra $(L, \cdot, ^{-1})$ of $< 2, 1 >$ type, whose elements and main operations satisfy the identities $x^{-1} \cdot xy = y = yx \cdot x^{-1}$, $xy = yx$, $xy \cdot zx = x(yz \cdot x)$ is called a *commutative Moufang loop.*

$3c_1$). The definition of commutative Moufang loop from item $3c$) does not correspond to the definition from [3], [1].

$3c_2$). The definition of commutative Moufang loop from item $3c$) is not correct, is not algebraical. For more details see items $1b_1$), $1b_2$).

$3d$). *The quasivariety of commutative Moufang loops is closed relative to the limit of the direct spectrum.*

$3d_1$). The statement from item $3d$) is not proved. According to [32] to prove it is necessary to consider the quasiidentities, but not the atomic formulas and universal formulas.

$3e$). A collection $\Lambda =< I, L_i, \varphi_{ij} >$, consisting of an oriented set $< I, \leq >$, a family $\{L_i | i \in I\}$ of commutative Moufang loops L_i and a family $\{\varphi_{ij} | i, j \in I, i \leq j\}$ of homomorphisms $\varphi_{ij} : L_i \to L_j$ is called a direct spectrum if φ_{ij} is an identical application and $\varphi_{ik} = \varphi_{jk}\varphi_{ij}$ for every $i, j, k \in I, i \leq j \leq k$.

$3e_1$). We denote by L_∞ the quotient set of the set $\cup_{i \in I} L_i x\{i\}$ by the equivalence relation $\equiv$:

$$(a, i) \equiv (b, j) \Leftrightarrow \exists k \in I(i \leq k \vee j \leq k \vee \varphi_{ik}(a) = \varphi_{jk}(b)).$$

$3e_2$). Let $[a, i]$ be the coset with respect to the equivalence relation $\equiv$ that contains the element $(a, i) \in L_i x\{i\}$. On the set L_∞ we define operations of commutative Moufang loops in the following way:

$$[a, i]^{-1} = [a^{-1}, i], \quad [a, i] \cdot [b, j] = [\varphi_{ik}(a) \cdot \varphi_{jk}(b), k], \text{where} i \leq k, j \leq k.$$

$3e_3$). We can check without any difficulty the correctness of these operations and whether they satisfy the relations of defining the commutative Moufang loop. The obtained commutative Moufang loop will be called *the direct limit over the direct spectrum* Λ and will be denoted by $\lim \Lambda$ [24].

$3e_4$). The definition of direct spectrum from item 33) does not correspond to the classical definition of direct spectrum. The authors of [62] have not understood or purposely changed the correct expression "a family $\{\varphi_{ij} | i, j \in I, i \leq j\}$ of isomorphisms $\varphi_{ij} : L_i \to L_j$" for "a family $\{\varphi_{ij} | i, j \in I, i \leq j\}$ of homomorphisms $\varphi_{ij} : L_i \to L_j$". Thus, the basic sense of direct spectrum is lost, leading to gross mistakes. Further, instead of "φ_{ij} is an identical application", "φ_{ii} is an identical application" is necessary.

$3e_5$). The inscription $L_i x\{i\}$ from items $3e_1$), $3e_2$) is not clear.

$3e_6$). Between items $3e$) and $3e_1$) it is necessary to add the expression "To distinguish elements $a \in L_i$ from elements Others loops L_j, $i \neq j$, we shall use the notation (a, i)".

$3e_7$). The statements from items $3e_2$), $3e_3$) are useless, as they follow directly from the correct definition of direct spectrum according to item $3e_4$).

$3f$). Now let us analyze the proof of Theorem 1. We cite items $3f_1$), $3f_2$).

$3f_1$). let $\mathcal{R}$ be a quasivariety each loop of which is different from its associator, and let us suppose that the quasivariety $\mathcal{R}$ contains unsolvable loops. Then it is clear that the free loop F of the quasivariety $\mathcal{R}$ with the countable set $\{x_1, x_2, \ldots\}$ of free generators $x_1, x_2, \ldots$, is unsolvable.

Let us analyze the direct spectrum $\tau =< N, F_i, \varphi_{ij} >$ consisting of the set of integers $N = \{0, 1, 2, \ldots\}$, the loop's isomorphic copies F_i of the loop $F_0 = F$ with the sets $\{x^i_1, x^i_2, \ldots\}$, $i = 1, 2, \ldots$, of free generators and the homomorphisms φ_{ij} defined in the following way:

$$\varphi_{ij} = \varphi_{j-l_j} \ldots \varphi_{i+1_{i+2}} \varphi_{i_{i+2}},$$

where the homomorphisms $\varphi_{k_{k+1}} : F_k \to F_{k+1}, \ldots$, are defined on generators by the equalities

$$\varphi_{0_{k+1}}(xj) = [x^l_{3j-2}, x^l_{3j-1}, x^l_{3j}],$$

$$\varphi_{k_{k+1}}(x^k_j) = [x^{k+1}_{3j-2}, x^{k+1}_{3j-1}, x^{k+1}_{3j}], \quad j = 1, 2, \ldots.$$

$3f_2$). Thus, generators of the loop $\lim \tau$ belong to the associator $(\lim \tau)'$ and therefore, we have $\lim \tau = (\lim \tau)'$. In such a way the non-identity loop $\lim \tau$ from the quasivariety $\mathcal{R}$ coincides with its associator, but this contradicts the hypothesis. This proves the theorem.

$3f_3$). According to item $3f_1$) the loop F_i is generated by set of free generators $\{x^i_1, x^i_2, \ldots\}$. It is clear that the set $\{\varphi_{i_{i+1}} x^i_1, \varphi_{i_{i+1}} x^i_2, \ldots\}$ generates the subloop $\varphi_{i_{i+1}} F_i \subseteq F_{i+1}$. Then $\{\varphi_{i_{i+1}} x^i_1, \varphi_{i_{i+1}} x^i_2, \ldots\} \cup \{x^{i+1}_1, x^{i+1}_2, \ldots\}$ generates a subloop of direct limit $\lim \tau$ of direct spectrum τ of commutative Moufang loops F_i. Let H be the subloop of $\lim \tau$ generated by set $\{\varphi_{i_{i+1}} x^i_1, x^{i+1}_1, x^{i+1}_2, x^{i+1}_3\}$. By [3] H is centrally nilpotent. Then by [37] $H' \subseteq \Phi(H)$, where $\Phi(H)$ denote the Frattini subloop. By item $3f_1$) we have $\varphi_{i_{i+1}} x^i_1 = (x^{i+1}_1, x^{i+1}_2, x^{i+1}_3)$. We get a contradiction: $\varphi_{i_{i+1}} x^i_1$ is a generator, $(x^{i+1}_1, x^{i+1}_2, x^{i+1}_3)$ is non-generator.

$3f_4$). From item $3f_3$) it follows that the equality $\lim \tau = (\lim \tau)'$ from item $3f_2$) is not proved.

$3f_5$). From item $3f_4$) it follows that the Theorem 1 is not proved.

$3f_6$). Similarly to Theorem 1 it is shown that Theorem 2 of [62] is not proved.

$3g$). The Theorems 1, 2 are used essentially in the proofs of Corollaries 1 – 5 of [62]. Hence, the Corollaries 1 – 5 of [62] are not proved.

$3h$). In particular, the following statement is not proved.

Corollary 5. *There exist 3-periodic commutative Moufang loops which contain subloops that coincide with their associator in the given loop.*

$3i$). According to items $3f_5$), $3f_6$), $3g$), $3h$) we conclude that the proofs of all assertion from paper [62] are erroneous, are completely senseless. The work [62] is written carelessly. For example, Corollaries 2 and 4 literally coincide. We appreciate that paper [62] similarly to papers [56], [16] from items $1o$), $2a$).

$4a$). To analyze paper [13] we cite the items $4a_1$), $4b$) – $4b_4$).

$4a_1$). **Theorem.** *If the loop L contains an infinite cyclic group Z and does not contain an infinity of p_i-periodic elements (p_i denote a prime number), then the quasiidentity qL generated by the loop L has an infinite and independent basis of quasiidentities.*

$4a_2$). **Theorem 1** [5]. *If the group L contains an infinite cyclic group Z and does not contain an infinity of p_i-periodic elements (p_i denote a prime number), then the quasiidentity qL generated by the group L has an infinite and independent basis of quasiidentities.*

$4a_3$). From items $4a_1$), $4a_2$) it follows that the main result of [13], the Theorem, literally coincides with Theorem 1 from [5]. The only difference is that the word "group" was replaced by word "loop".

$4a_4$). Lemma 1 and its proof from [13] is identic with the Lemma 1 and its proof from [5].

$4a_5$). Lemmas 2 and 3 and their proofs from [13] literally coincide with Lemma 3 and 2, respectively, and their proof from [5]. The only difference is that identity $u(x_1, x_2, \ldots, x_n) = e$ for loops in signature $(\cdot, /, \backslash, e)$ was replaced by $u_1(y_1, y_2, \ldots, y_k) = u_2(z_1, z_2, \ldots, z_m)$ for quasigroups in signature $(\cdot, /, \backslash)$.

$4a_6$). In proof of Lemma 3 in [5] is applied the Dik's Theorem, see item $7c_3$). Thus it is essential used the statement from item $7a_1$). In proof of Lemma 2 in [13] is used the Dik's Theorem for A-loops similarly to this. But it Is a roughest mistake as for A-loops not is known the analogue of item $7a_1$)..

$4a_7$). The proof of Theorem 1 from item $4a_2$) essential use the Lemmas 1 – 3 from [5]. Respectively, the proof of Theorem from item $4a_1$) essential use the Lemmas 1 – 3 from [13]. Moreover, the proof of Theorem from item $4a_1$) literally coincides with the proof of Theorem 1 from item $4a_2$). The only differences are mentioned in items $4a_3$) and $4a_5$).

$4a_8$). According to items $4a_3$) – $4a_7$) we conclude that Section 2 (and Section 1) of [13] is copied literally from [5], thus the roughest mistakes are admitted, see the item $4a_6$). Further, we cite from [13] items $4b$) – $4b_4$).

$4b$). **Corollary 2.** *Every torsion-free nilpotent loop has an infinite and independent basis of quasiidentities.*

$4b_1$). **3 Applications 1.** From local Mal'cev Theorem's the following coverage criterion of quasivarieties results: If the quasivariety M has an independent and infinite basis of quasiidentities, then M has an infinity of coverages. The detailed proof of this statement can be found, for instance, in [6].

$4b_2$). According to Corollary 2 and the coverage criterion of quasivarieties, we obtain the following statement.

$4b_3$). *If L is a torsion free nilpotent loop of any rank, then the quasivariety qL has infinity of coverages in the latices of loop quasivarieties.*

$4b_4$). Finally, I would like to thank the university teacher V. I.Ursu for his input to the final editing, as well as for the precious remarks in the construction of loops with infinite independent bases of quasiidentities.

$4b_5$). Item $4b_1$) is literally copied from [5].

$4b_6$). The statements from items $4b$) and $4b_3$) belong to the author of [13]. But in such formulations they are false, incorrect. It is necessary to add the conditions that the nilpotent loop contains an infinite cyclic group and the condition with respect to p-subloops.

$4b_7$). The items $4b$), $4b_3$) and $4b_4$) are a reason to consider an example of nilpotent loop. But this example is also copied, without mentioning it: however it is the example II.4.20 from [12] of centrally nilpotent commutative Moufang loop of class 2.

$4c$). According to items $4a_1$) – $4b_7$) we conclude that without false assertions of items $4b$) and $4b_3$) all results of work [13] are a literal and mechanical transfer of group results from [5] on quasigroups and loops. Some insignificant differences are specified in items $4a_3$), $4a_5$). Paper [5] is not mentioned.

$4c_1$). Paper [13] investigates quasivarieties of loops. It is not clear why the reviewers of paper [13] and the university teacher V. I.Ursu, mentioned in item $4b_4$), have not asked the question: what is the situation with similar results in the group theory?

$5a$). To analyze paper [61] we cite items $5a_1$), $5a_3$), $5b$).

$5a_1$). Let $L_0 \supseteq L_1 \supseteq \ldots \supseteq L_n \supseteq \ldots$ be the central descendant range of the loop L, i.e. $L_0 = L$, and for any $n > 0$, L_n/L_{n+1} is the subloop from the centre of the factor loop L/L_{n+1}. The loop L is called *nilpotent* (or *centrally nilpotent*) if there is such a natural number n that $L_n = \{e\}$. The least natural number n for which $L_n = \{e\}$ is called the *class of nilpotence* of L.

$5a_2$). The analyzed paper [61] uses essentially the results for nilpotent A-loop from [16], see items $2c_2$), $2d$), $2d_1$), $2e$), $2e_1$). The definition of nilpotent loop from item $5a_1$) differs from the corresponding definition from [16], see item $2e$). The equivalence of these definitions not is mentioned. In reality, these definitions are copied from Sandu's papers and this is covered:

for details see items $1b_4$), $2c_1$).

$5a_3$). Let L be a nilpotent A-loop of class 2 and x, y and z elements from L. The element $(x,y,z)x\backslash((xy \cdot z)/(yz))$ is called the associator of the elements $x, y, z \in L$; the element $[x, y] = x/(y/xy)$ is called the commutator of elements $x, y \in L$.

$5a_4$). The subloop of loop L, generated by the set

$$\{[x, y], (x, y, z)|x, y, z \in L\}$$

is called the *commutator* of the A-loop L and will be denoted by L'.

$5a_5$). The definition of commutator from item $5a_4$) differs From the corresponding definition from [16].

$5b$). According to [16] in any nilpotent A-loop of class 2 the following identities hold true

$$[x \cdot y, z] = [x, z] \cdot [y, z],$$

$$[x, y \cdot z] = [x, y] \cdot [x, z],$$

$$(x, y, z) = (y, x, z) \cdot (x, z, y),$$

$$(x, y, x) = e,$$

$$(x \cdot y, z, t) = (x, z, t) \cdot (y, z, t),$$

$$(x, y \cdot z, t) = (x, y, t) \cdot (x, z, t),$$

$$(x, y, z \cdot t) = (x, y, z) \cdot (x, y, t)$$

which will be used further by default.

$5b_1$). The identities from item $5b$) in [16] is not proved by items $2h_6$), $2i_5$). For this, see item $5a_2$).

$5b_2$). Identity $(x, y, x) = e$ from item $5b$) in [16] is not considered.

$5b_3$). Using the equivalent assertions from item $2g$) and the identities from $5b$) it is possible to show that the identity $(x, y, x) = e$ from item $5b$) is not correct in any A-loop.

$5c$). To analyze the main result of [61] we cite items $5c_1$) – $5c_5$).

$5c_1$). **Theorem.** *The quasiidentities of the finitely generated nilpotent A-loop have a finite basis of quasiidentities if and only if it is a finite Abelian group.*

Proof. ...

$5c_2$). The proof of sufficiency of Theorem is unsuccessful. The sufficiency directly follows from Ol'shanski result on finitely based of quasiidentities of finite group.

$5c_3$). Let L be a nilpotent A-loop. ...

According to [16], the periodical nilpotent A-loop is locally finite.

$5c_4$). According to Tueorem 2.6 [16], the loop L satisfies the condition of maximality for subloops ...

$5c_5$). Hence, the nilpotent A-loop L is finite. Suppose that L is non-associative or non-commutative. Then L contains a non-associative or non-commutative p-subloop H.

$5c_6$). The proofs of assertions from items $5c_4$), $5c_5$) in [16] are erroneous by item $2l$).

$5c_7$). For A-loops it is necessary precisely to determine the concept of a p-loop as unlike groups for A-loops two non-equivalent concepts are available [26]. For validity of assertion from $5c_5$) it is necessary to show that the totality of all p-elements of L form a subloop.

$5d$). The proof of Theorem contains the Lemmas $1 - 4$, which investigate the free loop F_n of the rank m with free generators $x_1, x_2, \ldots, x_n$ in the quasivariety, generated by loop N. By definition $N = lp(a_1, a_2)$, where $a_1 = a, a_2 = ab^{p^{\beta-1}}$, $a, b \in L$.

$5d_1$). The basis of proofs of Lemmas $1 - 4$ is the transformation of associators of elements of free loop F_n with the help of identities from item $5b$). The listed identities hold for nilpotent A-loop of class 2. To use these identities for F_n is a gross mistake.

$5d_2$). To correct the specified mistakes in item $5d_1$) it is necessary to show that loop F_n is nilpotent of class 2. It is not clear how it is possible to make such a variant of definition of nilpotent loop from item $5a_1$).

$5e$). Lemma 1 is the basis to prove Theorem. But its proof contains a gross mistake.

$5e_1$). Further we will mark as F_n (or $F_n(x_1, \ldots, x_n)$) the free loop in the quasivariety $Q(N)$, of the rank m (with free generators $x_1, \ldots, x_n$).

Lemma 1. *The commutator F'_n of the $Q(N)$-free loop $F_n(x_1, \ldots, x_n)$ is a free Abelian group with the exponent p, with the following free generators:*

a) (x_i, x_i, x_j), (x_i, x_j, x_j), $1 \leq i < j \leq n$; (x_i, x_j, x_k), $1 \leq i < j < k \leq n$; $[x_i, x_j]$, $1 \leq i < j \leq n$,

if F_n is non-commutative;

b) (x_i, x_i, x_j), (x_i, x_j, x_j), $1 \leq i < j \leq n$; (x_i, x_j, x_k), $1 \leq i < j < k \leq n$;

if F_n is commutative.

$5e_2$). *Proof.* To prove the lemma it is sufficient to show that any relation of equality between the generators of the group F'_n shown in a) (for b) the procedure is similar) is a trivial identity in the variety $V(N)$.

$5e_3$). Indeed, let

$$\Pi_{1 \leq i < j \leq n}(x_i, x_j, x_k)^{\alpha_{ij}} \cdot \Pi_{1 \leq i < j \leq n}(x_i, x_i, x_j)^{\beta_{ij}}.$$

$$\Pi_{1\leq i<j<k\leq n}(x_i, x_j, x_k)^{\gamma_{ijk}} \cdot \Pi_{1\leq i<j\leq n}(x_i, x_j)^{\delta_{ij}} = e \quad (1)$$

be a such a relation of equality.

$5e_4$). The assertion from item $5e_2$) is correct theoretically. But it applies only for elements of free A-loop F_n of variety $V(N)$ written down in canonical, normal form with respect to free generators of F_n. This problem is in detail described in [12] for various varieties of loops.

According to item $5c_5$) the loop N is a p-loop. [26] proves that if p is an odd prime and Q is a finite commutative A-loop, then Q is centrally nilpotent. We know now that no nonassociative finite simple commutative A-loop of order less than 2^{12} exists [27].

$5e_5$). Unlike free groups, the given assertions show the supercomplexity of a problem from item $5e_4$) for free A-loop F_n.

$5e_6$). From item $5e_5$) it follows that the equality (1) from item $5e_3$) there is not enough for the proof of Lemma 1. Consequently, the Lemma 1 is not proved. To analyze the proofs of Lemmas 2 - 4 it is not meaningful.

$5e_7$). From items $5b_3$), $5c_6$), $5c_7$). $5d_1$), $5d_2$), $5e_6$) it follows that the proof of Theorem is senseless.

$5f$). Further, we cite items $5f_1$) – $5g_1$).

$5f_1$). Directly from the Theorem two corollaries follow.

$5f_2$). **Corollary 1.** *If a finite nilpotent A-loop is not commutative or associative, then it has no basis of quasiidentities from a finite number of variables.*

$5f_3$). **Corollary 2.** *If L is a finitely generated nilpotent A-loop, then Q(L) = V (L) if and only if L is a finite Abelian group.*

$5g$). Similarly to [60] we will prove the following.

$5g_1$). **Corollary 3.** *The lattice of subquasivarieties of the variety generated by a finitely generated nilpotent and non-associative or non-commutative A-loop has the power of the continuum.*

$5h$). From items $5e_7$), $5f_1$) it follows that the Corollaries 1 – 3 are not proved. Consequently, all assertions from paper [61] are not proved, many from them are false.

4 On V. Ursu compositions

$6a$). Paper [60], mentioned in item $5g$) is characterized similarly as [61] in item $5h$).

$7a$). Many works of Budkin A. I., Gorbunov V. A. and others investigate questions about cardinality, independence of basis of quasiidentities and describe the latices of subquasivarieties of quasivarieties of various classes of groups, particularly, of nilpotent groups. To find an answer to these questions, the following result is used essentially.

$7a_1$). Every n-generated subgroup of group

$$< x, x_1, \dots, x_{2n}; x^{p_i}[x_1, x_{n+1}] \dots [x_n, x_{2n}] >, \quad i \in \mathfrak{N},$$

is free. [6, Lemma 3], [5].

$7a_2$). Many works of Ursu V. I. examine similar questions, mentioned in item $7a$), for quasivarieties of centrally nilpotent commutative Moufang loops and for quasivarieties of centrally nilpotent Moufang loops. In general the proofs of these questions in Ursu's works have the following form. The statements on quasivarieties of groups and their proofs contain the following replacements: commutator in group $\Rightarrow$ associator in commutative Moufang loop or commutator-associator in Moufang loop; nilpotent group $\Rightarrow$ centrally nilpotent Moufang loop. As a result, such mechanical replacements result in none-sense. Moreover, the assertions from items $5e_4$) and $5e_5$) for A-loops hold for commutative Moufang loop, for centrally nilpotent Moufang loops at the specified transitions from groups to such loops. We present some examples, analyzing a little Ursu's works.

$7b$). We cite items $7b_1$) – $7b_5$) to analyze paper [53].

$7b_1$) (pag. 106). Fix some integer $m \geq 2$ and denote by $\mathfrak{N}$ the variety defined in class of all commutative loops Moufang by the following identities:

$$(\forall x)(x^{3^m}) = 1), (\forall x)(\forall y)(\forall z)([x, y, z]u \cdot v = [x, y, z] \cdot uv).$$

$7b_2$). Now we denote by B that loop of $\mathfrak{N}$ represented as:

$$B = (a, b, c \parallel a^{3^m} = b^{3^m} = c^{3^{m-1}} = 1, \quad a^{3^{m-1}} = [a, b, c].$$

$7b_3$). We denote by $Q(B)$ the quasivariety generated by B. In the following via $\mathfrak{M}$ we shall understand the class of all loops of $Q(B)$, which does contain the subloops isomorphic to B.

We investigate the commutative loops Moufang A_n, $n = 1, 2, \dots$, which are represented in the variety $\mathfrak{N}$ as follows:

$$A_n = (x_1, \dots, x_n \parallel [x_i, x_j, x_k] =$$

$$= \begin{cases} 1, & \text{if } 2|i, 2|j, 2|k \text{ or } 2 \nmid i, 2 \nmid j, 2 \nmid k, \\ x_k^{3^{m-1}}, & \text{otherwise.} \end{cases}$$

$$1 \leq i < j < k \leq n.$$

$7b_4$). According to Dick's theorem [33] the application $\phi : A_n \to B$ for which $x_n^\phi = a$, $x_{n-1}^\phi = b$, $x_{n-2}^\phi = c$, $x_i^\phi = 1$, $i = 1, \dots, n-3$ is a loop morphism from A_n into B.

$7b_5$). **Theorem 1.** *The unique maximal quasivariety $\mathfrak{M}$ of the lattice $L_qQ(B)$ is not generated by a finite loop.*

Theorem 2. *The set of all quasivarieties each of them generated by a finite loop of the variety $\mathfrak{N}$ does not form a sublattice in the lattice of all quasivarieties of $\mathfrak{M}$.*

$7c$). The Dick's theorem [33, Theorem V.11.5] examines only an algebraic system given by defining relations. The loops A_n and B are defined in items $7b_2$) and $7b_3$) with the help diagrams (see [33, pag. 251]. Hence, the assertion from item $7b_4$) is false. For this see also item, $7c_2$) containing a variant of Dick's theorem for groups.

$7c_1$). The assertion from item $7b_4$) is essentially used to prove the main results of paper [53], the Theorems 1, 2. Hence, Theorems 1, 2 are not proved.

$7c_3$). **Dick's theorem** [7]. *Let the group G has in given quasivariety $\mathfrak{N}$ the representation $G = gr(\{x_i | i \in I\} \parallel \{r_j(x_{j_1}, \dots, x_{j_{i(j)}}) = 1 | j \in J\})$. Assume that $H \in \mathfrak{N}$ and the group H contains a set of elements $\{g_i | i \in I\}$ such that for every $j \in J$ the equality $r_j(g_{j_1}, \dots, g_{j_{i(j)}}) = 1$ is true in H. Then the mapping $x_i \to g_i (i \in I)$ proceeds up to homomorphism G in H.*

$7d$). Let's now examine others non-senses from [53], for example, the equality $a^{3^{m-1}} = [a, b, c]$ from item $7b_2$). The item $7c_1$) is sufficient to conclude that all results of [53] are not proved, the work [53] is a nonsense.

$8a$). Similarly to group's theory and using the methods described in item $7a_2$) Ursu's works [54], [55], [58], [59] investigate some questions for quasivarieties of commutative Moufang loops. Let's consider only a few roughest mistakes contained in papers [54], [55], [58], [59]. They are sufficient to conclude that all results and their proofs from [54], [55], [58], [59] are erroneous, often are without sense.

$8a_1$). We cite items $8b$), $8b_1$), $8c$), $8c_1$), $8c_2$), $8c_4$), $8d$), $8f$), $8f_1$), $8f_2$), $8g$), $8g_1$) to analyze papers [54], [55], [58], [59].

$8b$). A commutative Moufang loop (see [3]) is an algebra L with the unary operation $^{-1}$ and a binary operation $\cdot$ in which for any $x, y, z \in L$ we have

$$xy = yx, \quad xy \cdot zx = x(yz) \cdot x, \quad x^{-1} \cdot xy = y \quad [54], [58].$$

$8b_1$). A groupoid $L(\cdot)$ is called a *quasigroup* if, for any $a, b \in L$, each of the equations $ax = b$, $ya = b$ has a unique solution. A quasigroup with unity is called a *loop* [55].

$8b_2$). The definition from item $8b$) is incorrect by item $1b_2$) .

$8b_3$). The definition from item $8b_1$) is not algebraic by [33].

$8b_4$).The definitions of quasigroup, loop from item $8b_1$) (from [55]) does not allow to use the powerful apparatus of quasivarieties, of varieties loops, particular, of their free loops according to item $8b_3$).

$8c$). We introduce the following notation [54], [58]:

$F_n = F_n(x_1, \ldots, x_n)$ is the free commutative Moufang loop of order n generated by the free elements $x_1, \ldots, x_n$;

$\mathfrak{N}_2$ is the class of all commutative Moufang loops with nilpotency class ≤ 2 defined by the identity

$$(xy \cdot z)(x \cdot yz)^{-1} \cdot uv = ((xy \cdot z)(x \cdot yz)^{-1} \cdot u)v;$$

$\mathfrak{N}_{2,3^k}$ is the variety defined in $\mathfrak{N}_2$ by the identity $x^{3^k} = 1$, where $k \neq 0$ is a natural number;

$F_n(\mathfrak{M}) = F_n(\mathfrak{M}; x_1, \ldots, x_n)$ is the free commutative Moufang loop of rang n of the variety $\mathfrak{M} \subseteq \mathfrak{N}_2$;

$Q(L)$ is the quasivariety generated by the commutative Moufang loop L;

$L_q\mathfrak{M}$ is the lattice of subquasivarieties of the quasivariety $\mathfrak{M} \subseteq \mathfrak{N}_2$;

$T = Q(F_3), T_k = Q(F_3(\mathfrak{N}_{2.3^k}))$;

Z_{p^k} is the cyclic group of order p^k, where p is a prime.

$8c_1$). Usually, the elements of the commutative Moufang loop $F_n(x_1, \ldots, x_n)$ are called the words of the variables $x_1, \ldots, x_n$ and the elements of F_n' are called associator words.

$8c_2$). For each $k = 1, 2, 3, \ldots$ let $\mathfrak{N}_{(2,3^k)}$ be the sub-quasivariety of $\mathfrak{N}_{2,3^k}$ defined by the quasi-identities:

$$x^{3^{k-1}} = 1 \rightarrow [x, y, z] = 1, \tag{4}$$

$$x^3 = [x_1, x_2, x_3] \ldots [x_{3n-2}, x_{3n-1}, x_{3n}] \rightarrow x^3 = 1, \tag{5}$$

where n runs over the natural numbers. Let $\mathfrak{N}_{(2)}$ be the quasivariety of $\mathfrak{N}_2$ defined by the quasi-identities:

$$x^9 = 1 \rightarrow x^3 = 1,$$

$$x^3 = 1 \rightarrow [x, y, z] = 1, \tag{7}$$

$$x^p = 1 \rightarrow x = 1, \tag{8}$$

where p runs over all the prime numbers not equal to 3.

$8c_3$). **Proposition**. *A quasivariety* $\mathfrak{N}_{(2,3^k)}$, $k = 1, 2, 3, \ldots$, *contain a non-associative commutative Moufang loops if and only if* $k = 1$. *In such* *case the quasivariety $\mathfrak{N}_{(2,3)}$ coincides with variety $\mathfrak{N}_{2,3}$ of all centrally nilpotent commutative Moufang loops of class ≤ 2 $\mathfrak{N}_2$ which satisfy the identity* $x^3 = 1$.

Proof. Let L be a centrally nilpotent Moufang loop, then $L' \neq L$. By [37] the associator suploop L' belongs to Frattini subloop $\Phi(L)$. Hence the quotent loop L/L' is non-unitary. By [3] $a^3 \in Z(L)$ for all $a \in L$. Then the subloop L^3 generated by set $\{a^3 | a \in L\}$ is normal in L. Hence the quotent loop L/L^3L' is an elementary abelian 3-group. In such case L/L^3L' decompose into a direct product of cyclic groups of order 3 and the Frattini subloop $\Phi(L/L^3L')$ as intersection of all maximal proper subloops of L/L^3L' ([3, Theorem VI.2.1]) is equal to unit $L^3L' = \overline{1}$. By [3, Lemma VI.2.1] $\Phi(L)/L^3L' \subseteq \Phi(L/L^3L') = \overline{1}$, From here it follows that $L^3L' = \Phi(L)$.

The free loop $F(\mathfrak{N}_{(2,3^k)}; x_1, x_2, \ldots, x_{3n}) = F_{3n}(\mathfrak{N}_{(2,3^k)})$ satisfies the identity $x^{3^n} = 1$. Then by [37] it is finite. Let us consider the subvariety $\mathfrak{B}$ of variety $\mathfrak{N}_{(2,3^k)}$ defined by identity $x^3 \cdot [x_1, x_2, x_3] \ldots [x_{3n-2}, x_{3n-1}, x_{3n}] = 1$ and let $F(\mathfrak{B}; x_1, x_2, \ldots, x_{3n}) = F(\mathfrak{B})$ be the $\mathfrak{B}$-free loop. By [33] $F(\mathfrak{B}) = F_{3n}(\mathfrak{N}_{(2,3^k)})/H$, where H is the verbal subloop of $F_{3n}(\mathfrak{N}_{(2,3^k)})$ generated by loop word $x^3 \cdot [x_1, x_2, x_3] \ldots [x_{3n-2}, x_{3n-1}, x_{3n}]$. The subloop H is normal in $F_{3n}(\mathfrak{N}_{(2,3^k)})$. Then $H \subseteq F_{3n}(\mathfrak{N}_{(2,3^k)})^3 F_{3n}(\mathfrak{N}_{(2,3^k)})'$.

From the previous reasonings it follows that subloop H is finite and $H \subseteq \Phi(F_{3n}(\mathfrak{N}_{(2,3^k)})$. Now we have $F(\mathfrak{B}; x_1, x_2, \ldots, x_{3n}) = F_{3n}(\mathfrak{N}_{(2,3^k)}; x_1, x_2, \ldots, x_{3n})/H = F_{3n}(\mathfrak{N}_{(2,3^k)}; x_1H, x_2H, \ldots, x_{3n}H) = lp(x_1H, x_2H, \ldots, x_{3n}H) = lp(x_1, x_2, \ldots, x_{3n}, H) \equiv lp(x_1, x_2, \ldots, x_{3n}) = F_{3n}(\mathfrak{N}_{(2,3^k)}; x_1, x_2, \ldots, x_{3n})$. The symbols x_i, $i = 1, 2, 3n$ are free generators. Then $F_n(\mathfrak{B}) \equiv F_n(\mathfrak{N}_{(2,3^k)})$ for all finite number n.

By [33, Theorem VI.14.1] every variety of algebras is generated by its algebras of finite rang. Hence $\mathfrak{B} = \mathfrak{N}_{(2,3^k)}$. From definition of variety $\mathfrak{N}_{(2,3^k)}$ it follows that for $k > 1$ not all non-associative loops from $\mathfrak{B}$ satisfy the identity $x^3 = 1$. (If $k > 1$ then the quasiidentity $x^{3k-1} = 1 \rightarrow (x, y, z) = 1$ holds in any commutative Moufang loop Q, as $Q^3 \subseteq Z(Q)$ by [3]). We consider $\mathfrak{B} = \mathfrak{N}_{(2,3^k)}$ as quasivariety. Obviously, the quasivariety $\mathfrak{B} = \mathfrak{N}_{(2,3^k)}$ satisfies the quasiidentity (5) if and only if $k = 1$. In such case the quasiidentity (4) holds.

8c_4). We shall say that the loop L of the variety $\mathfrak{M} \subseteq \mathfrak{N}_2$ has the representation $L = lp(x_1, \ldots, x_n \parallel R = 1)$, in $\mathfrak{M}$ if $L \cong F_n(\mathfrak{M}; x_1, \ldots, x_n)/\overline{R}$, where $\overline{R}$ is the normal subloop in $F_n(\mathfrak{M})$ generated by the set $R \subseteq F_n(\mathfrak{M})$.

8c_5). Let $\mathfrak{N}$ be a variety of commutative Moufang loops and let $F_n = F_n(x_1, \ldots, x_n) = lp(x_1, \ldots, x_n)$ denote the $\mathfrak{N}$-free loop with free generators $x_1, \ldots, x_n$. Assume that a loop $L \in \mathfrak{N}$ has the representation $L =$

$lp(x_1, \dots, x_n \parallel R = 1)$, in $\mathfrak{N}$, where R is a set of associator words in $x_1, \dots, x_n$. The loop F_n is finite generated. By [3], [37] the associator subloop F_n' is finite. Moreover, by [37] the Frattini subloop $\Phi(F_n)$ is normal in F_n and $F_n' \subseteq \Phi(F_n)$. Then the normal subloop $\overline{R}$ is finite and $\overline{R} \subseteq \Phi(F_n)$. Similar of item $8c_3$) let $L \cong F_n(x_1, \dots, x_n)/\overline{R} = lp(x_1, \dots, x_n)/\overline{R} = lp(x_1\overline{R}, \dots, x_n\overline{R}) = lp(x_1, \dots, x_n \cup \overline{R}) = F_n(x_1, \dots, x_n)$ since $\overline{R} \subseteq \Phi(F_n)$ is a finite loop. Consequently, $L \cong F_n$.

$8c_6$). Let $L = lp(x, x_1, \dots, x_n)$ be a finitely generated commutative Moufang loop and let M denote the quotient loop of loop L by the relation $x^3 = u$, where $u \in L'$ is an associator word in variables $x, x_1, \dots, x_n$. If $x \notin \Phi(L)$ then $x^3 = 1$ in loop L.

Indeed, from relation $x^3 = u$ and $(L')^3 = \{1\}$ [3] it follows that $x^{3^2} = 1$. Again by [3], $x^3 \in Z(L)$ and the relation $x^3 = u$ can be written in form $x^3 v = 1$ where $v \in L'$. Hence $lp(x^3)$ is a finite normal subloop of L. As L is finitely generated then the associant L' if finite. Then the normal subloop R of L, generated by $x^3 v$, is finite and by item $8c_5$) $R \subseteq \Phi(L)$.

By hypothesis $M \equiv L/R$. But $L/R = lp(x, x_1, \dots, x_n)/R = p(xR, x_1R, \dots, x_nR) = p(x, x_1, \dots, x_n, R) = p(x, x_1, \dots, x_n) = L$. Obviously, $x^3 = 1$ in M. Hence $L = lp(x, x_1, \dots, x_n)$ and $x^3 = 1$ in L.

$8d$). A loop is referred to as monolite if it is finitely generated and is not decomposable in a direct product of two nonunit subloops of it.

$8d_1$). Let $\mathfrak{M}$ be a variety of commutative Moufang loops. Then any $\mathfrak{M}$-free commutative Moufang loop of exponent 0 or 3^k is monolite [43, Proposition 5].

$8e$). Let $\mathfrak{M}$ be a quasivariety of commutative Moufang loops and L be an arbitrary commutative Moufang loop. By [58] (respect. [54]) the least normal subloop H of L for which $L/H \in \mathfrak{M}$ is called the quasiverbal subloop of the loop L corresponding to the quasivariety $\mathfrak{M}$ (respect. $\mathfrak{M}$-replica of L).

$8e_1$). According to [33, pag. 297, 371] (respect. [33, Corollaries V.11.7, V.12.10] it is possible to considered that the loop L considered in item $8e$) is a free loop of quasivariety $\mathfrak{M}$.

$8f$). **Lemma 1** [54], [55]. *Let $\mathfrak{M}$ be a non-associative quasivariety from the arbitrary variety $\mathfrak{N} \in \{\mathfrak{N}_2, \mathfrak{N}_{2,3^k}; k = 1, 2, \dots\}$ and let a loops A, B of $\mathfrak{M}$ be represented in $\mathfrak{N}$ by*

$$A = lp(x_1, \dots, x_n \parallel M(x_1, \dots, x_n) = 1),$$

$$B = lp(y_1, \dots, y_m \parallel N(y_1, \dots, y_m) = 1),$$

where M, N are totalities of associator words. If H is the normal subloop of $C = A\star B$ generated by some associators of the form $[x_i, x_j, y_k]$ or $[x_i, y_j, y_k]$, then $C/H \in \mathfrak{M}$.

$8f_1$). **Proof.** ... The elements of C which are not in the subloop $[A, A, B][A, B, B]$ are approximated by the loop $A \times B$ via the natural morphism $\varphi : C \to C/[A, A, B][A, B, B]$. By the condition imposed on the generators of H it follows that $\ker\varphi = [A, A, B][A, B, B]$.

$8f_2$). Then the loop morphism which we are looking for is the epimorphism $\varphi : C \to F_3(\mathfrak{N}; x, y, z) \in \mathfrak{M}$ defined by equalities

$$x_p^\varphi = x, \quad x_q^\varphi = x, \quad y_r^\varphi = z, \quad x_i^\varphi = 1 (i \neq p, i \neq l, 1 \leq i \leq n),$$

$$y_j^\varphi = 1, \quad (j \neq r, 1 \leq j \leq m).$$

$8f_3$). According to definition of free product of algebras the loop $C = A \star B$ defined in item $8f$) is defined not by generators $x_1, \dots, x_n, y_1, \dots . y_m$ of loops A and B but is generated by elements of loops A and B. Hence, the elements of $A \star B$ are loop words with respect to elements from $A \cup B$. In such a case the elements from $A \star B$ written down in normal (canonic, non-reduced, least length with respect to generators from $A \cup B$) form can not contain subwords of kind uv, where $u, v \in A$ or $u, v \in B$. Hence the associators considered in item $8f$) have no normal, canonical form.

$8f_4$). The contents of item $8f_1$) is a mechanical replication from group theory, using the methods described in item $7a_2$). To hide it the author Ursu V. I. adds the senseless proposition: by the condition imposed on the generators of H it follows that $\ker\varphi = [A, A, B][A, B, B]$. The last equality is not obvious, it is necessary to prove. Here it is received by mechanical replication from group theory. This is confirmed by the following quote from group theory [29, pag.459].

$8f_5$). Exists an epimorphism of free product $\prod^\star_{\alpha \in N} A_\alpha$ on direct product $\prod_{\alpha \in N} A_\alpha$ the same groups, defined by identical mappings of groups A_α, $\alpha \in I$, on itself. A kernel D of it epimorphism is called the cartesian subgroup and consists of those and only of those words, at which the product of all factors, belonging to group A_α, is equal to 1 for all $\alpha \in I$. On the other hand, the cartesian subgroup D is a normal subgroup generated by all commutators of kind $[a_\alpha, a_\beta]$, where $\alpha \neq \beta$ and a_α, a_β belong to the given systems of generators of groups A_α, A_β.

$8f_6$). Similar of item $7c$) the assertion from item $8f_2$) is false, is a roughest mistake.

$8f_7$). According to items $8f_4$) and $8f_6$) we conclude that the proof of Lemma 1 from item $8f$) is erroneous, is a complete senseless.

$8g$). **Lemma 2** [54]. *Let* $\mathfrak{N}$ *be one of the quasivarieties* $\mathfrak{N}_2$ *or* $\mathfrak{N}_{2,3^k}$, $k \geq 1$. *If a commutative Moufang loop* L_n *of nilpotence class 2 has the representation in* $\mathfrak{N}_2$

$$L_n = lp(x_1, \ldots, x_{3n} \parallel \Pi_{i=1}^{3n-2}[x_i, x_{i=1}, x_{i=2}] = 1),$$

then the $\mathfrak{N}$*-replica of* L_n *belongs to the quasivariety* $Q(F_3(\mathfrak{N}))$.

$8g_1$). The proof of Lemma 2 uses essentially Lemma 1 and the similar assertion from item $8f_2$). From items $8f_6$) and $8f_7$) it follows that the proof of Lemma 2 from item $8g$) is erroneous, is completely senseless.

$8g_2$). In Lemma 2 the notion of $\mathfrak{N}$-replica can be replaced by notion of $\mathfrak{N}$-free loop according to item $8e_1$). In such a case it is not necessary to use Lemma 1 and the proof of Lemma 2 becomes obvious.

$8g_3$). Lemma 4 is easily proved if using the assertion from item $8c_5$).

$8h$). **Lemma 5** [54]. *Let* L *be a monolithic commutative Moufang loop of nilpotence class 2. Then* $L \in \mathfrak{N}_{(2,3^k)}$ *(respectively* $L \in \mathfrak{N}_{(2)}$*) iff* L *satisfies the both following conditions: the exponent of* L *is* 3^k *(respectively is* 0*), and the set of defining relations of* L *in* $\mathfrak{N}_{(2,3^k)}$ *(respectively* $\in \mathfrak{N}_{(2)}$*) consists only of associator words which are equalized to 1.*

$8h_1$). The conditions of Lemma 5 are erroneous, senseless. Taking into account items $8c_5$), $8d_1$) and Proposition from item $8c_3$) the correct Lemma 5 is the Proposition 5 from [42]: if a non-associative relatively free commutative Moufang loop has the exponent 3^k or 0 that it is not decomposable in direct product of its subloops.

$8h_2$). Unlike the proof of Proposition 5 from [42], presented in item $8h_1$), the proof of Lemma 5 from item $8h$) is a totality of erroneous statements in large volume. To reduce significantly the volume of proof let us use items $8c_5$), $8d_1$) and Proposition from item $8c_3$).

$8i$). The main results of paper [54], the Theorems 1, 2, the Corollaries $1-3$, similarly assume the groups's assertions from Budkin's and Fedorov's papers [20], [9] of groups, particularly, of nilpotent groups of class 2 . [54] does not state it. The proofs are a mechanical replication of group results by the methods described in item $7a_2$) (for example, using the notions of compactness theorem [23], servant subgroups, isolator [7] and others). Reading the work [54], there is an impression that some assertions belong to the author of [54], but actually they are a literal replication of group results.

$8i_1$). The contents of the main results of [54] mentioned in item $8i$) are erroneous. Their lengthy proofs are also erroneous, using unproved assertions for loops for which the group's analogue are proved in Budkin's and Fedorov's papers [20], [9].

$8i_1$). It is possible to correct and prove the main results of [54] by the methods described in item $8h_2$). This decreases essentially the volume of proofs.

$8j$). According to the above stated we conclude that all results and their proofs from work [54] are erroneous, the work not is mathematical.

$9a$). Section 1 of [58] contains the used denotations and preliminary results. As mentioned in item $8a_1$), works [58], [59] use the same denotations as [54], see items $8b$), $8b_2$), $8c$) – $8c_2$), $8c_4$), $8d$) – $8e$).

$9a_1$). In [58] the following notations are also introduced.

$$H_{\infty\infty\infty} = F_3(x,y,z), H_{r\infty\infty} = lp(x,y,z) \parallel x^{3^r} = 1),$$

$$H_{rs\infty} = lp(x,y,z) \parallel x^{3^r} = y^{3^s} = 1),$$

$$H_{rst} = lp(x,y,z) \parallel x^{3^r} = y^{3^s} = z^{3^t}1), H_{00t} = Z_{3^t}, H_{00\infty} = Z, H_{000} = \{1\},$$

where r, s, t are integers such that $0 \leq r \leq s \leq t$; $H_{r\infty\infty}$, H_{rst}, Z_{p^m}.

A_{mk} (respectively, A_m) $= lp(a_{ij}, 1 \leq i \leq m, 1 \leq j \leq 3m+3)$ is a loop of the variety $\mathfrak{N}_{2,3^k}$ (respectively $\mathfrak{N}_2$) whose determinant relations are

$$\prod_{i=1}^{m+1}[a_{13i-2}, a_{13i-1}, a_{13i}] = \ldots = \prod_{i=1}^{m+1}[a_{m3i-2}, a_{1mi-1}, a_{m3i}]. \tag{4}$$

$$[a_{ij}, a_{kl}, a_{pr}] = 1, i \neq k \vee i \neq p \vee k \neq p, 3 < j, l, r < 3m+3; \tag{5}$$

$B_{lmk} = A^1_{mk} \times \ldots \times A^1_{mk}$ (respectively, $B_{lm} = A^1_m \times \ldots \times A^1_m$) is the Cartesian product of l copies of the loop A_{mk} (respectively, A_m).

$$a = \prod_{i=1}^{m+1}[a_{13i-2}, a_{13i-1}, a_{13i} \tag{6}$$

is a element of loop A_{mk} (respectively, A_m).

$9a_2$). According to item $8c_5$) the loop A_{mk} (respectively, A_m) defined by associator relations (4) (respectively, (5)) is a $\mathfrak{N}_{2,3}$-loop (respectively, $\mathfrak{N}_2$-loop).

$9a_3$). The auxiliary preliminary results are the Lemmas 1.1 – 1.6.

$9a_4$). The Lemma 1.2 is the false Lemma 1 from item $8f$), see the items $8f_1$) – $8f_7$).

Lemma 1.3 [54]. $F_{3n}(\mathfrak{N}_{(2,3^k)}$ (resp., $\mathfrak{N}_{(2)}; x_1, \ldots, x_{3n})/lp([x_1, x_2, x_3]$ $[x_4, x_5, x_6] \ldots [x_{3n-2}, x_{3n-1}, x_{3n}]) \in T_k$ (resp., T.)

The Lemma 1.3 is given as a result of [54], but in such a form it is not present in [54]. Actually Lemma 1.3 is a mechanical replacement from the group's theory as is shown in item $7a_2$). See also the items $8h) - 8h_2$) regarding Lemma 1.3.

$9b$. As was shown in [59], the subquasivarieties of $\mathfrak{N}_{2,3}$ are characterized by associator quasivarieties. For $k \geq 2$, we shall emphasize in $\mathfrak{N}_2$ and in $\mathfrak{N}_{2,3^k}$, those quasivarieties which have the same structure and are also characterized by associator quasivarieties.

$9b_1$. The assertions from item $9b$ are false by item $8c_5$).

$9c$). Lemma 1.5. *For any $l \geq 1$, the lattices of the non-associative quasivarieties $\mathfrak{N}_{(2,3^l)}$ and $\mathfrak{N}_{(2)}$ are isomorphic.*

$9c_1$). Proof. According to the quasi-identities (4), (5) (respectively (5)–(7)) of item $8c_2$) the determinant relations of any monolite non-associative loop of $\mathfrak{N}_{(2,3^l)}$ (respectively, $\mathfrak{N}_{(2)}$) are equalities of some associator words to unit elements (see Lemma 5 of [58]).

$9c_2$). It is clear that the non-associative subquasivarieties of the quasivarieties $\mathfrak{N}_{(2,3^l)}$ and $\mathfrak{N}_{(2)}$ are generated by monolite loops.

$9c_3$). We establish a reciprocal correspondence between non-associative monolite loops of $\mathfrak{N}_{(2,3^l)}$ and monolite non-associative loops of $\mathfrak{N}_{(2)}$ in the following way. We consider that to the monolite non-associative loop $A^l \in \mathfrak{N}_{(2,3^l)}$ with generators $a_1^l, \ldots, a_n^l$ and the determinant relations in $\mathfrak{N}_{(2,3^l)}$ $R(a_1^l, \ldots, a_n^l) = 1$, there corresponds the monolite non-associative loop $A \in \mathfrak{N}_{(2)}$ with generators $a_1, \ldots, a_n$ and determinant relations (in $\mathfrak{N}_{(2)}$) $R(a_1, \ldots, a_n) = 1$.

$9c_4$). Lemma 1.5 is false. According to Proposition of item $8c_3$) it is necessary to consider the case $l = 1$.

$9c_5$). It is necessary to consider the free loops instead of monolite loops according to item $8f_5$) in items $9c_2$), $9c_3$). Even in such a case the assertion from item $9c_2$) is non-correct. By [33] the quasivarieties are not always characterized by free algebras.

$9c_6$). According to items $9c_4$) and $8c_5$) the assertion from item $9c_3$) is senseless. The proof of Lemma 1.5 is very lengthy. Similarly to items $9c_1$) – $9c_5$), a part of the proof is senseless. Consequently, Lemma 1.5 and its proof is false, is senseless.

$9d$). Lemma 1.6. *For $m = 1, 2, \ldots$ we have $A_{mk} \in T_k$, $A_m \in T$.*

$9d_1$). Proof. An element $a \in A_{mk}$ (respectively, A_m) is approximated by the morphism of loops $\varphi : A_{mk} \to F_3(\mathfrak{N}_{2,3^k}; x, y, z)$ (respectively, $A_m \to F_3(x, y, z)$) defined by the equalities ...

$9d_2$). The proof of Lemma 1.6 is false as in item $9d_1$) a similar mistake is made as in item $7c$) and the false Lemma 1.2 from item $9a_4$) is used.

$9e$).The work [59] is a direct continuation of work [58] and all assertions of [58], in particular, Sections 2 and 3, are intended to prove the main result of [59], the Theorem from item $10a_1$). Now let us analyze in detail Sections 2, 3 and also [59] due to its large volume. Note that [58], [59] are not mathematical works. All results of these works are erroneous, [58], [59] are completely senseless. We will confirm this below only partially.

$9e_1$). The false Lemmas 1.2 – 1.6 from [58], considered earlier, are applied repeatedly.

$9e_2$). The false reasonings, described in item $7c$) with respect to existence of homomorphisms loops, similar to Dick's Theorem, are applied repeatedly.

$9f$). Following [58, pag. 40] we define the loop H_m of the variety $\mathfrak{N}_{2,3^k}$ (respectively, $\mathfrak{N}_2$), which is essentially investigated in Section 2, as follows:

$9f_1$). $B = B(n,k)$ (respectively, $B(n)$) $= lp(x, x_1, \ldots, x_{3n} \parallel [x, x_1^{\alpha_1}, \ldots$ $\ldots, x_{3n}^{\alpha_{3n}}, x_1^{\beta_1}, \ldots, x_{3n}^{\beta_3^n}] = 1)$;

$9f_2$). $H = H(n,k)$ (respectively, $H(n)$) is the factor-loop of the loop B by the relation $x^3 = \prod_{i=1}^n [x_{3i-2}, x_{3i-1}, x_{3i}]$;

$9f_3$). H_m is the factor-loop of the $\mathfrak{N}_2$-free product of the loops B and A_{mk} (respectively, A_m) by the relation $x^3 = \prod_{i=1}^n [x_{3i-2}, x_{3i-1}, x_{3i}]a$, where a is defined by (6) of item $9a_1$).

$9f_4$). Every n-generated commutative Moufang loop is centrally nilpotent by Bruck-Slaby's Theorem [3]. Then the equality $[x, x_1^{\alpha_1}, \ldots, x_{3n}^{\alpha_{3n}}$, $x_1^{\beta_1}, \ldots, x_{3n}^{\beta_3^n}] = 1)$ from item $9f_1$) holds in any commutative Moufang loop. Then the loop $B(n,k)$ (respectively, $B(n)$) defined in item $9f_1$) is the $\mathfrak{N}_{2,3^k}$-free (respectively, $\mathfrak{N}_2$-free) loop with free generators $x, x_1, \ldots, x_{3n}$. The last statement follows also from item $8c_5$).

$9f_5$). By item $8c_6$) the loop $H(n,k)$ (respectively, $H(n)$) is generated by elements $x, x_1, \ldots, x_{3n}$ and $x^3 = 1$. Then from item $9f_4$) it follows that $H(n,k)$ (respectively, $H(n)$) is the $\mathfrak{N}_{2,3}$- free loop with free generators $x, x_1, \ldots, x_{3n}$.

$9f_6$). In relation to item $9f_3$) it follows that $x^3 = 1$ by item $9f_4$) or $8c_6$). Then $\prod_{i=1}^n [x_{3i-2}, x_{3i-1}, x_{3i}]a = 1$. From here it follows that $B = A_{mk}$ or $\prod_{i=1}^n [x_{3i-2}, x_{3i-1}, x_{3i}] = 1$ and $\prod_{i=1}^{m+1} [a_{3i-2}, a_{3i-1}, a_{3i}] = 1$.

$9f_7$). The items $9f_5$), $9f_6$) contradict all researches of Section 2 of [58] and of the main result of paper [59], the Theorem of item $10a_1$). We confirm it on the example of Lemma 2.1.

$9g$). Lemma 2.1. $H_m \in Q(H)$.

$9g_1$). Proof. An element $a \in H_m$ is approximated by the loop $F_3(\mathfrak{N}_{2,3^k}; u, v, w)$ (respectively, $F_3(u, v, w)$) via the morphism of loops φ : $H_m \to F_3(\mathfrak{N}_{2,3^k})$ (respectively, $H_m \to F_s$) defined by the equations:

$$x_1^\varphi = u^{-1}, x_2^\varphi = v, x_3^\varphi = w, x_4^\varphi = 1, \ldots, x_{3n}^\varphi = 1, x^\varphi = 1,$$

$$a^{\varphi}_{j_1} = u, a^{\varphi}_{j_2} = v, a^{\varphi}_{j_3} = w, i = 1, \ldots, m;$$
$$a^{\varphi}_{i_j} = 1, i = 1, \ldots m, j = 4, \ldots, 3m+3.$$

$9g_2$). Now, we show that $H_m/lp(a) \in Q(H)$.
$9g_3$). Indeed, $H_m/lp(a) \equiv H \star (A_{mk}/lp(a)$ (respectively, $H \star (A_m/lp(a)))$, where $A_{mk}/lp(a) \in T_k$ (respectively, $A_m/lp(a) \in T$). But $T_k \in Q(H)$ (respectively, $T \in Q(H)$).
$9g_4$). Then by Lemma 1.2, we have $H_m/lp(a) \in Q(H)$. The proof is complete.

$9g_4$). According to item $7c$) the definition of morphism of loops $\varphi : H_m \to F_3(\mathfrak{N}_{2,3^k})$ (respectively, $H_m \to F_s$) from item $9g_1$) is false.

$9g_5$). The assertion from item $9g_2$) is false. The subloop $lp(a)$ is not normal in loop H_m.

$9g_6$). Similarly to item $9g_5$) the expression $A_{mk}/lp(a)$ is false. The expression $T_k \in Q(H)$ from item $9g_3$) is also false.

$9g_7$). According to item $9g_6$) the Lemma 1.2 mentioned in item $9g_4$) is false.

$9g_8$). According to items $9g_4$) – $9g_7$) we conclude that the Lemma 2.1 from item $9g$) is completely senseless. Moreover, all results of Section 2 are false.

$9h$). All results of Section 3 are a research of loop L'_m. Let us define it. But at first we remind that item $9a_1$) defines the loop B_{lmk}. Take the loop $B_{l_1n_1} = A^{l_1i}_{m1} \times \ldots \times A^{l_1i}_{m1}$ and denote the generators of the subloop A^j_{m1}, $1 \leq j \leq l_i$, by a^{ji}_{11}, a^{ji}_{12}, $\ldots, a^{ji}_{m,3m+3}$, respectively. Now, define the loop L'_m as the factor-loop of the $\mathfrak{N}_{2,3}$-free product of the loops B_{l_1n1} and $F_n(\mathfrak{N}_{2,3}; z_1, \ldots, z_{ni})$ by the relations

$$H_i(z_1, \ldots, z_{ni}) = 1, \tag{11}$$

$$[a^{ji}_{rs}, a^{ki}_{pq}, z_{li} = 1(j = k \rightarrow\notin \{3j-2, 3j-1, 3j\}), \tag{12}$$

$$[a^{ji}_{rs}, z_{pi}, z_{qi}] = 1(p \vee q \notin \{3j-2, 3j-1, 3j\}), \tag{13}$$

$$a^{1i}[z_{1i}, z_{2i}, z_{3i}]v_{1i} = \ldots = a^{i_1i}[z_{3l_i-2,i}, z_{3l_i-1,i}, z_{3l_i,i}]v_{l_ii}, \tag{14}$$

where $a^{1i}, \ldots, a^{l_ii}$ are elements of the loops $A^{1i}_m, \ldots, A^{l_ii}_{ml}$.

$9h_2$). Lemma 3.1. $L'_m \notin T_1$.

$9h_3$). Proof. Let $\varphi : L'_m \to F_3(\mathfrak{N}_{2,3})$ be a morphism of loops.

$9h_4$). The definition of loop L'_m uses essentially Lemma 1.2 from item $8f$). Then from relations (12) – (14) of item $9h$) and item $9a_4$) it follows that the definition of loop L'_m is false, not trivial loops L'_m do not exist.

$9h_5$). The assertion of item $9h_3$) is false by item $7c$).

$9h_6$). Lemma 3.1 from item $9h_2$) is false according to items $9h_4$), $9h_5$).

$9h_7$). The definition of loop L'_m from item $9h$) is almost literally stated in paper [58]. It consists of plenty of symbols with confusing indexes which do not correspond to the previously considered indexes.

It is impossible to read. The entire Section 3 is written in the same manner. From Section 3 we cited only items $9h_2$), $9h_3$). But it it is enough to conclude.

$9h_8$). According to items $9h_4$) – $9h_7$) we conclude that Section 3 consists only of senseless and false notions and results.

$10a$). Now let us analyze the main result of papers [58], [59], the Theorem from [59]. We cite items $10a_1$) – $10a_7$).

$10a_1$). Theorem. A lattice $\mathcal{K}$ of subquasivarieties of commutative Moufang loops with nilpotency class ≤ 2 is finite if and only if any quasivariety in $\mathcal{K}$ is generated by a finite set of loops of the types $H_{\infty\infty\infty}$, $H_{r\infty\infty}$, $H_{rs\infty}$, H_{rst}, Z_{p^m}, where $p \neq 3$ is a prime number.

$10a_2$). Proof. Sufficiency. …According to the belonging criteria, this will be true if every finitely generated loop $B \in \mathcal{K}$ is approximated by its subloops generated by three elements.

We show that it is indeed the case. If $b \in B$ and $b \notin B'$ then, obviously, b is approximated by a cyclic subgroup.

$10a_3$). Let $b \in B'$. Since $H_{\infty\infty\infty}$, $H_{r\infty\infty}$, $H_{rs\infty}$, H_{rst} are approximated respectively by the loops $Z_{3^t} \times F_3(N_{2,3})$, $Z_{3^t} \times Z \times F_3(N_{2,3})$, $Z_{3^t} \times Z \times F_3(N_{2,3})$, $Z \times F_3(N_{2,3})$, b is approximated by the loop $F_3(N_{2,3})$.

$10a_4$). Let $\varphi : B \to F_3(N_{2,3}; x, y, z)$ be a morphism of loops such that $b^\varphi = [x, y, z]$.

$10a_5$). Necessity. Let Σ be the set of all loops of the types indicated in item $9a_1$) and let $\mathfrak{K}$ be a quasivariety which contains only a finite number of subquasigroups. Suppose for a contradiction that $\mathfrak{K}$ is not generated by a finite set of finite nonisomorphic loops of Σ.

Let $L \in \mathfrak{K}$ be a finite commutative Moufang loop of exponent equal to a power of 3. For some elements $a, b_1, \ldots, b_{3n} \in L$ let $a^3 = \prod_{i=1}^{n}[b_{3n-2}, b_{3n-1}, b_{3n}] \neq 1$.

$10a_6$). Let $[a, b_1^{\alpha_1} \ldots b_{3n}^{\alpha_{3n}}, b_1^{\beta_1} \ldots b_{3n}^{\beta_{3n}}] = 1$, where $0 \leq \alpha_i < 3$, $0 \leq \beta_i < 3$. Let us investigate the commutative Moufang loop $B = lp(x, y_1, \ldots, y_{3n} \parallel x^3 = \prod_{i=1}^{n}[y_{3n-2}, y_{3n-1}, y_{3n}], x, y_1^{\alpha_1} \ldots y_{3n}^{\alpha_{3n}}, y_1^{\beta_1} \ldots y_{3n}^{\beta_{3n}}] = 1)$, where 3^k (respectively 0) is the exponent of the loop L (and the relations are given in the variety $\mathfrak{N}_{2,3k}$ (respectively, $\mathfrak{N}_2$)). We show that the loop $B \in Q(L)$.

$10a_7$). Denote $T = lp(x^3, [x, y, z]$ for all elements $y, z \in B) \subset B$. Any element of the subloop T is approximated by L via the morphism of loops of B in L.

$10a_8$). The assertion from item $10a_3$) are not obvious, they need to be proved. Actually this statement is false.

$10a_9$). The definition of morphism $\varphi : B \to F_3(N_{2,3}; x, y, z)$ from item $10a_4$) contradicts item $7c$).

$10a_{10}$). From item $8c_6$) it follows that $a^3 = 1$ for element a defined in item $10a_5$).

$10a_{11}$). According to item $9f_4$) the loop B from item $10a_6$) is free. Then the assertion from item $10a_7$) is false.

$10a_{12}$). The proof of necessity uses essentially the false Lemmas 1.3, 1.5, 2.6, 3.16 from [58].

$10a_{13}$). From items $10a_8$) – $10a_{12}$) it follows that the proof of the main result of paper [58], [59], the Theorem from item $10a_1$), is not proved, is completely senseless.. Moreover, the contents of Theorem is false. It confirms also the following statement.

$10b$). The definitions of loops $H_{r\infty\infty}$, $H_{rs\infty}$, H_{rst} from item $10a_1$) make sense if $r = s = t = 1$. In such a case they are free commutative Moufang loops with three free generators satisfying identity $x^3 = 1$.

$10b_1$). Indeed, remind that a loop L of a variety $\mathfrak{M}$ has the representation $L = lp(x_1, \ldots, x_n \parallel R = 1)$ in $\mathfrak{M}$ if $L \cong F_n(x_1, \ldots, x_n)/\overline{R}$, where $\overline{R}$ is the normal subloop of $\mathfrak{M}$-free loop F_n with free generators $x_1, \ldots, x_n$, generated by the set $R \subseteq F_n$.

We consider the loop $H_{r\infty\infty} = lp(x, y, z) \parallel x^{3^r} = 1)$. Then $H_{r\infty\infty} \equiv F_3(x, y, z)/\overline{(}R)$, where $\overline{(}R)$ is the subloop of $F_3(x, y, z)$ generated by x^{3^r}. By item $8c_3$) $\overline{(}R) \subseteq \Phi(F_3)$. Then from here Similarly of item $8c_6$) it follows that $r = 1$.

Hence, $x^3 = 1$ in the free loop $F_3(x, y, z)$. In every free loop every one-to-one mapping of free generators on free generators proceeds up to automorphism. Then from $x^3 = 1$ it follows that $y^3 = z^3 = 1$.

$10c$). Further, all researches of Section 2 from [59] are connected with loops H_{rst}, namely with condition $r, s, t > 1$. From items $10b$), $10b_1$) it follows that all these researches are without sense.

$10d$). According to items $10a_{13}$), $10c$) we conclude that paper [59], as well as [58], consists mainly of false, senseless statements.

Now let us analyze papers [64] – [68]. Similarly to [16] (see items $2a$) – $2n$)) These papers are published in the works of various conferences to avoid reviews.

$11a$). Let us start the analyses of paper [64]. Section 2 introduce the notions of centrally nilpotent and centrally solvable loops in a slightly papers [56], [60], [61], [66] – [68], see items $1a_3$), $2a_1$) – $2b_2$), $5b_2$), $6a$). As mentioned before, this was done to hide plagiarism. Actually the notions and results of Sections 2 and 3. It is stated in detail in [14, Sections 2, 3].

$11b$). Now we quote the begin of Section 4.

Next we shall show that the following assertion is trues: *a) the subloops, b) the factor loops and c) the direct product of a finite number of finitely separable loops are also finitely separable.*

$11b_1$). The first paragraph after item $11b$) contains the proofs of statements a) and b) of item $11b$). But these proofs are a plagiarism. The proof of Theorem 3 from [32] for algebras with permutable congruences literally corresponds for particular case, for loops.

$11b_2$). The statement c) of item $11b$) is proved in the following paragraph. The proof given here literally coincides with proof of Theorem 4 from [32]. The only distinction between these proofs: word "group" was replaced by varies on the word "loop", record "ab^{-1}" in group varies by record "a/b" for loop.

$11c$). Further the following comes.

Let us investigate now an example where we indicate an finitely approximable nonseparable loop. In the variety of commutative nilpotent of class 2 Moufang loops we consider the free loop F of strictly countable rank and the loop L given by the generators x, x_i, $i = 1, 2, \ldots$, and the relations

$$x_i^3 = 1, [x_i, x_{2i}, x_{3i}] = x, i = 1, 2, \ldots,$$

$$[x_j, x_k, x_l] = 1, (j, k, l) \notin \{(i, 2i, 3i) | i = 1, 2, \ldots\}.$$

This loop L has the associant-commutant $H = \{1, x, x^2\}$, which coincides with its center.

$11c_1$). The example from item $11c$) is false. More particularly, the related example is a complete nonsense. We explain it. The commutative Moufang loop L is centrally nilpotent of class 2, then $L' \neq L$. From relations $L^3L' = \Phi(L)$ (item $8c_3$)), $L' = \Phi(L)$ and $[x_i, x_{2i}, x_{3i}] = x$ it follows that $x \in \Phi(L)$. But x is a generating element. We get a contradiction.

$11d$). Further, similarly to items $11b_1$), $11b_2$), something improbable follows. The author V. Ursu literally copies, with one insignificant change (see item $11f$)) almost the whole paper of A. I. Mal'cev [32]. The only specific thins of paper [32] is item $11e$).

$11d_1$). Dear author V. Ursu, the name of A. I. Mal'cev is a sacred name in mathematics. To assume to yourself the ideas and results of A. I. Mal'cev is not like assuming to yourself the notions and results of N. Sandu, A. Budkin and others. It is a disrespect to A. I. Mal'cev, it is a crime.

11e). A.I. Mal'cev in [32] studied limited solvable groups, and proved that a limited solvable group is finitely separable. Next we will show that this result can be extended to limited solvable Moufang loops.

11f). I think that in an attempt to hide plagiarism Lemma 7 was used instead of Lemma 2 from [32], as it has the same meaning as Lemma 2. It is simple to prove that Lemma 7 is similar to Lemma 2.

11f_1). To item 11f) refers also to the following quotes from the Introduction.

11f_2). In this paper we study in detail the structure of finite separable soluble Moufang loops. In particular, it appears that solvable Moufang loops with maximum condition for subloops finite separable, which amplifies results from the theory of residual finite theory ([1] Hirsch, K.A., On infinite solvable groups, J. London Math. Soc. 27 (1952), 81-85, [2] Grünberg, K.W., Residual properties on infinite solvable groups, Proc. London Math. Soc. 3(7) (1957), 29-62.).

11f_3). It turned out that in a Hausdorff topology all subloops of finite separable solvable Moufang loop are closed sets. At the end prove the existence of an algorithm to solve the membership problem for nilpotent Moufang loops (commutative Moufang loops or nilpotent A-loops).

11g). Now we list the achievement of V. Ursu. Section 4. If one wants to read the Mal'cev paper [32] it is enough to read the present analyzed Ursu's paper [64] taking into account the following: a) to change designation of Lemma 7 by Lemma 2 (see item 11f)); b) the designation L' for associant-commutant by L_1 for commutant. Then:

the quote after Definition 1 is the beginning of Section 5;

Lemma 6 is Lemma 1;

Lemma 8 is Lemma 3;

Corollary 1 is the quote after Lemma 3;

Theorem 1 is Theorem 6;

Corollary 2 is the quote after Theorem 6.

11h). In the end of Section 4 V. Ursu assumes aggain to himself another's assertions: every finitely generated centrally nilpotent Moufang loop or A-loop satisfies the maximum condition for subloops. The author was notified on the inaccuracy of his proofs in [56], [61], see items 1g_2), 2l). Moreover, V. Ursu was informed about the authorship of these assertions, see, for example, [14].

11i). Section 5 continues the plagiarism described in items 11b_1), 11b_2), 11d), 11g). They literally copied from Section 7 of Mal'cev's paper [32] the decision of two tasks, mentioned in item $11f_3$). Similarly to item $11d$) the Mal'cev's paper [32] is not mentioned.

$11i_1$). Section 5 consists of two items a), b). Item b) contains for loops a literal, word for word copy (particularly is identical: the word "algebra" was replaced by word "loop") of the algorithm of solving the problem about membership of element in given subalgebra of finite residual algebra.

$11i_2$). **Theorem 3.** *If the nilpotent Moufang loop (commutative Moufang loop or nilpotent A-loop) L is defined by a finite number of generators and by a finite number of relations, then for the loop L the membership problem of a subloop element is algorithmic solvable.*

$11i_3$).The proof of Theorem 3 from item $11i_2$) uses the positive decision of a problem of words for finitely generated centrally nilpotent Moufang loops or A-loops referring to work [56], [16]. But by items $1h_1$), $2k$) the proofs of word problem are erroneous.

$11j$). It is known [3], [1] that the congruences of groups, of loops one-to-one are characterized with the help of normal subgroups, of normal subloops. Item a) from Section 5 is another plagiarism of V. Ursu, an attempt to transfer the Mal'cev result from Section 6 in [32] about algebra with set of congruences on loop with appropriate set of normal subloops. But here there is a nuance, see item $11l_4$). We explain it. Let's follow [32, Section 6] in items $11k$) – $11k_2$) and [64, Section 5, item a)] in items $11l$) – $11l_3$), $11m$).

$11k$). For abstract algebra A with some set S of its congruences with defined properties is defined the S-topologies considering open set the coset classes of congruences in S. Let $\mathcal{K}$ be a class of algebras of same type as A. Every homomorphism of A into algebra in $\mathcal{K}$ defines a congruence and let S be the set of such congruences.

$11k_1$). We consider that algebra A is $\mathcal{K}$-approximate. Then the S-topologies on A is called $\mathcal{K}$-topology. It is proved that the algebras with $\mathcal{K}$-separable subalgebras are only those algebras for which all abstract subalgebras are closed in $\mathcal{K}$-topology.

$11k_2$). If $\mathcal{K}$ is the class of all finite algebras, then $\mathcal{K}$-topology is called finite. Then according to definition of finite separable loop the statement from item $11k_1$) is formulated as follows.

$11k_3$). *A solvable loop is finite separable if all it abstract subloops are closed in finite topology.*

$11l$). Particularly, we obtain the following: the finitely separability of H in relation to the all elements of L that do not belong to H is equal to the fact that H should be closed in finitely topology.

$11l_1$). In conclusion the loops with finitely separable subloops are those

loops whose subloops in finite topology are finite sets.
$11l_2$). Now according to Theorem 1, we can affirm the following statement.

$11l_3$). **Theorem 2.** *All subloops of finite separability solvable Moufang loops are closed sets.*

$11l_4$). Comparison of the statement from item $11l_3$) with Theorem 2 from item $11l_3$) shows complete incompetence of author V. Ursu. It confirms the contents of items $11l$) – $11l_2$). -The notion of finitely topology from item $11l$) is not determined and is not clear. The expression from item $11l_1$) is without sense. The role of Theorem 1 in item $11l_2$) and the role of Moufang loop in item $11l_3$) are not clear.

$11l_5$). The role of the text from item $11m$) is also not clear. I think that it can be found in enough papers [44], [45].

$11m$). Finally I want to bring thanks Prof. Mitrofan Chioban for good will to discuss this paper and for valuable comments.

$11n$). According to the above-stated we conclude that to publish such a composition as [64] is a crime.

$12a$). Paper [65] deserves the same appraisals as paper [64] from item $11n$). This work literally coincides with item a) of Section 5 from [64].

$13a$). We continue the analysis of works [66] – [68], mentioned in item $11a$). Papers [66] and [67] are literally identical.

$14a$). Let's follow [66]. We quote items $14a_1$) – $14a_5$), $14b$) – $14b_3$), $14c$) – $14c_8$).

$14a_1$). We shall use some notions and results from the monograph of R.H. Bruck [3].

$14a_2$). The Moufang Loop (ML) is an $< L, \cdot, ^{-1} >$ algebra of type ¡2; 1¿ whose operations and elements satisfy the following identities:

$$x(y \cdot xz) = (xy \cdot x)z \tag{1}$$

$$x^{-1} \cdot xy = y = yx \cdot x^{-1} \tag{2}$$

where by x^{-1} we denote the result of the unary operation applied to the x element.

$14a_3$). We observe that the (2) involves the identity $y \cdot (x^{-1})^{-1} = yx$, which in its turn involves the identity $(x^{-1})^{-1} = x$, that helps to deduce the identity

$$x \cdot x^{-1}y = y = yx^{-1} \cdot x \tag{3}$$

$14a_4$). For a certain $x \in L$ element we denote $e = x^{-1} \cdot x$. Then, according to the identities (1) – (3) we will have

$$ye = x^{-1} \cdot x(ye) = x^{-1}[x \cdot y(xx^{-1})] = x^{-1}[(xy \cdot x)x^{-1}] = x^{-1} \cdot xy = y$$

for any $y \in L$.
$14a_5$). It results that $e = y^{-1} \cdot y$ and, therefore, e doesn't depend on the x element. Then, taking in consideration that (3)

$$e \cdot y = yy^{-1} \cdot y = y$$

for any $y \in L$, it follows that e is a unit element of ML L.

$14a_6$). The definition of Moufang loop from item $14a_2$) differs from definition from the monograph [3], mentioned in item $14a$). Moreover, it is false.

$14a_7$). It is not clear how identity $(x^{-1})^{-1} = x$ in item $14a_3$) follows from (2). Hence, identity (3) is not is proved.

$14a_8$). The identical transformations from item $14a_4$) are not clear, are false.

$14a_9$). According to item $14a_8$) the assertion from item $14a_5$) is false.

$14b$). For x, y and z elements from ML L the associator $[x, y, z]$ and the commutator $[x, y]$ are defined by the equalities $[x, y, z] = (x \cdot yz)^{-1} \cdot (xy \cdot z)$ and $[x, y] = x^{-1} \cdot y^{-1}(xy)$, respectively.

The set $Z(L) = \{x \in L | [x, y, z] = e, [x, y] = e \quad \text{for any} \quad y, z \in L\}$ is called the ML L center.

$14b_1$). With the help of the induction hypothesis special associant-commutator of the n multiplicity its defined; x_1 is a special associant-commutator of 1 multiplicity; if u is a special associant of n multiplicity which the includes exactly i_n variables, then $[u; x_{i_{n+1}}]$, $[u; x_{i_{n+1}}, x_{i_{n+2}}]$ is a special associant-commutator of $n+1$ multiplicity.

$14b_2$). ML L is called (central-)nilpotent (NML) of n class or n-nilpotent if for any values of the variables in L the value of any special associant-commutator of $n+1$ multiplicity is equal to the $e \in L$ unity element, but the value of at least one special associant-commutator of n multiplicity is different from e.

$14b_3$). According to [56] in any nilpotent Moufang loop of class 2 the following identities are true (4) . . . (10).

$14b_4$). The definition of center $Z(L)$ from item $14b$) differs from definition in the monograph [3], mentioned in item $14a$).

$14b_5$). According to item $14b$) it is logical to use expression "associator-commutator" instead of "associant-commutator" in item $14b_1$).

$14b_6$). The author purposely distors the notions from items $14b_4$) and $14b_5$). It is made to confuse the reader, to hide the truth presented in item $14b_8$).

$14b_7$). The notion of special associant-commutator of n multiplicity in monograph [3] is absent. Moreover, in [3] the notion of centrally nilpotent loop is defined with the help of upper central series.

$14b_8$). Actually, author V. Ursu has copied the notions of special associant-commutator and centrally nilpotent loop the and assumed to himself from Sandu's manuscripts of monograph (lost together with the reviews on fault of V. Ursu) and papers, see, for example, [40], [42], [35], [14], [38] and others. These papers, detailed in [14], prove the equivalence of definitions of centrally nilpotent loop from [3], item $14b$) and items $2d$) – $2e_1$). From Ursu's works follows that the author not understands and is not capable to understand the proof by this equivalence.

$14b_9$). According to item $1e_3$) the identities (4) – (10), mentioned in item $14b_3$), are not proved in [56]. In particular, the identity (5) $[x \cdot y, z, t] = [x, z, t][y, z, t]$, which is essentially used in proofs from [66], [67], is not proved. This is confirmed by the proof of identity (5.30) from [3, pag. 128].

$14c$). The following varieties are defined in the class of all 2-nilpotent Moufang loops:

$$\mathcal{K}_{1,0,0} = mod\{[x, y, z] = e\},$$

$$\mathcal{K}_{1,p,0} = mod\{[x, y, z] = e, [x, y]^p = e\},$$

$$\mathcal{K}_{1,p,p^m} = mod\{[x, y, z] = e, [x, y]^p = e, x^{p^m} = e\},$$

where $m = 2, 3, \dots$ for $p = 2$ and $m = 1, 2, \dots$ for any prime number $p \geq 3$,

$$\mathcal{K}_{2,0,0} = mod\{[x, y, z]^2 = e\},$$

$$\mathcal{K}_{2,2,0} = mod\{[x, y, z]^2 = e, [x, y]^2 = e\},$$

$$\mathcal{K}_{1,2,2^m} = mod\{[x, y, z]^2 = e, [x, y]^2 = e, x^{2^m} = e\},$$

$$\mathcal{K}_{3,0,0} = mod\{[x, y, z]^3 = e\},$$

$$\mathcal{K}_{3,1,0} = mod\{[x, y, z]^3 = e, [x, y] = e\},$$

$$\mathcal{K}_{3,1,3^m} = mod\{[x, y, z]^3 = e, [x, y] = e, x^{3^m} = e\},$$

$$\mathcal{K}_{3,3,0} = mod\{[x, y, z]^3 = e, [x, y]^3 = e\},$$

$$\mathcal{K}_{3,3,3^m} = mod\{[x, y, z]^3 = e, [x, y]^3 = e, x^{3^m} = e\}, m = 1, 2, \dots$$

Denote by $\mathcal{B}$ the set of all varieties defined above.

$14c_1$). **Lemma 1.** *If a 2-nilpotent Moufang loop N is finite, then there exists such a variety $\mathcal{K} \in \mathfrak{B}$ that $F_3(\mathcal{K}) \in qN$.*

$14c_2$). *Proof.* Since N is nilpotent we can regard N as a p-loop. Let $\exp(N) = p^m$. $14c_2$). We consider the following possible cases.

1) *N is non-associative and $p = 2$.*

2) *N is non-associative and $p = 3$.*

3) *N is associative and p is any prime number.* Similarly to the previous cases we can show that if in the group N the identity $[x, y]^{p^k}$ holds true for a certain natural number k, $1 \leq k \leq m$, then for $k = 1$ we have $F_3(\mathcal{K}_{1,p,p^m} \in q(N)$.

$14c_3$). **Lemma 2.** *If the 2-nilpotent Moufang loop N, generated by three elements, is infinite, then there exists such a variety $\mathcal{K} \in \mathfrak{B}$ that $F_3(\mathcal{K}) \in qN$.*

Proof. Since the loop N is not finite, then $\exp(N) = 0$.
$14c_4$). We will consider the following possible cases.

1) Let N be non-associative, in N the identity $(x, y, z)^2 = e$ holds true and $\exp(lp([u, v]|u, v \in N)) = 2^m s$, where m is a non-negative integer and 2 does not divide s.

2) N is non-associative, the identities $(x, y, z)^3 = e$ and $\exp(lp([u, v]|u, v \in N)) = 3^m s$, hold true in it, where m is a non-negative integer and 3 does not divide s.

3) N is non-associative, the identities $(x, y, z)^3 = e$ (respectively, $(x, y, z)^2 = e$) and $\exp(lp([u, v]|u, v \in N)) = 0$, hold true in it.

4) N is non-associative, the identities $(x, y, z)^2 = e$ and $(x, y, z)^3 = e$ do not hold true in it.

5) N is associative and $\exp(lp([u, v]|u, v \in N)) = 3^m s$ where p is a prime number and p does not divide s and $m \geq 1$. In this case we consider in the $v(N)$-free group $F_3(x, y, z)$ the elements $a = x^s$; $b = y^{p_{m-1}s}$, $c = z^{p_{m-1}s}$ and $H = lp(a, b, c)$. Then it is obvious that the loop HH with exponent zero is non-commutative and the following equalities hold true

$$[a; b]^p = e, \quad [a, c]^p = e, \quad [b, c]^p = e.$$

Then in the non-commutative group H the identity $[x, y]^p = e$ is true. Applying the same reasoning as in 1) or 2) we obtain $F_3(\mathcal{K}_{1,p,0}) \cong H \in q(N)$.

6) N is associative and $\exp(lp([u, v]|u, v \in N)) = 0$. Similarly to previous cases we can easily deduce that $F_3(\mathcal{K}_{1,0,0}) \cong H \in q(N)$.

$14c_5$). According the Lemmas 1, 2 and 3 we can formulate the following theorem.

$14c_6$). **Theorem 1.** *If Q is a quasivariety that contains a nilpotent non-associative or non-commutative Moufang loop, then there exists at least one variety $\mathcal{K} \in \mathfrak{B}$ so that $F_\infty(\mathcal{K}) \in Q$.*

$14c_7$). From Theorem 1, Lemmas 1 – 3 results the following sentence:

$14c_8$). **Theorem 2.** *Cvasivarietaties us all non-abelian minimal of the lattice cvasivarietaties of 2-nilpotent Moufang loops are: - minimal non-associative quasivarieties of commutative Moufang loops*

$$q(F_\infty(\mathcal{K}_{3,1,0}), \quad q(F_\infty(\mathcal{K}_{3,1,3^m}) \quad (m = 1, 2, \ldots);$$

- minimal non-associative and non-commutative quasivarieties of Moufang A- loops with one proper minimal non-associative sub-quasivariety of commutative Moufang loops and one proper minimal non-commutative sub-quasivariety of groups;

$$q(F_\infty(\mathcal{K}_{3,0,0}), \quad q(F_\infty(\mathcal{K}_{3,3,0}), \quad q(F_\infty(\mathcal{K}_{3,1,3^m}), \quad m = 1, 2, \ldots);$$

-minimal non-associative and non-commutative quasivarieties of Moufang loops with the only proper non-commutative subquasivariety of groups

$$q(F_\infty(\mathcal{K}_{2,0,0}), \quad q(F_\infty(\mathcal{K}_{2,2,0}), \quad q(F_\infty(\mathcal{K}_{2,2,3^m}), \quad m = 2, 3, \ldots);$$

-minimal non-commutative quasivarieties of groups

$$q(F_\infty(\mathcal{K}_{1,0,0}), \quad q(F_\infty(\mathcal{K}_{1,p,0}) \quad p == 2, 3, \ldots);$$

$$q(F_\infty(\mathcal{K}_{1,2,2^m 0}) \quad m = 2, 3, \ldots) \quad q(F_\infty(\mathcal{K}_{1,p,p^m 0}) \quad (p \geq 3, m = 2, 3, \ldots).$$

$14c_9$). Theorems 1 and 2 from items $14c_6$) and $14c_8$) are false, their proofs are "ingenious". It follows from assertions of items $14c_5$), $14c_7$) and the following remarks.

$14c_{10}$). It is necessary to prove the statement from item $14c_2$). For groups it follows from the purpose of given work: describes the smallest quasivarieties and well known assertion: a finite nilpotent group decomposes into direct product of their primary components.

$14c_{11}$). In item $14c_1$) for p from expression $\exp(N) = p^n$ are not considered all cases for finite Moufang loop N: $p \neq 2; 3$. Similarly for infinite Moufang loop N in item $14c_4$).

$14c_{12}$). The assertions of items $14c_{10}$), $14c_{11}$) are not connected directly with quasivarieties of groups considered in Theorem 2. For such quasivarieties in items $14c_2$), $14c_4$) the complete, rather short proofs of Lemmas 1, 2 are stated. But these proofs are false, are a complete nonsense. It is not clear what the author V. Ursu has hopes for when publishing such proofs.

$14c_{13}$). Actually the correct proof of statements for groups of Theorem 2 is not simple, involving many mathematics. For example, A. N. Fedorov [19], [21] has found criterion of finiteness of lattice of all subquasivarieties of quasivariety generated by finite 2-nilpotent group. S. A. Shakhova [47] has generalized this criterion for finite generated 2-nilpotent group. In [9] A. I. Budkin has established, that among non-abelian quasivarieties of 2-nilpotent groups without torsion only one quasivariety (particularly, the quasivariety generated by free 2-nilpotent group of rank 2) has finite lattice of quasivarieties.

$14c_{14}$). Clearly that all quasivarieties of 2-nilpotent groups considered in Theorem 2 do not satisfy to criteria listed in item $14c_{13}$).

$14d$). For the remaining part of the analyzed work, Theorem 3, Examples 1 – 3, we quote the items $14e$), $14e_1$).

$14e$). **Theorem 3.** *If the alternative ring K with a unit contains a nilpotent sub-ring R with index $n \geq 2$ (i.e. any product of n factors $a_1a_2 \dots a_n = 0$ for any $a_1, \dots, a_n \in K$), then the set L of all elements of the form $1 + x$, where $x \in R$, forms a nilpotent Moufang loop of class $n - 1$.*

$14e_1$). *Proof.* The equality $(1 + r)(1 - r + r^2 - \dots + (-1)^{n-1}r^{n-1} = 1$ where $x \in R$, shows that any element from the set L is reversible and, therefore, L is a Moufang loop.

$14e_2$). It is necessary to give reason, to prove the statement of item $14e_2$), see, for example, [48].

$14e_3$). The proof of Theorem 3 is very bulky, confusing, it is not clear why designation $x^\star = -x + x'$ is entered. The Theorem 3 is a known fact, the beginning being Mal'cev's result for groups [31]. For commutative Moufang loops the Theorem 3 contained in [22]. In these papers the proofs are rather simple, less computing than in the analyzed work [67]. The proofs become even simpler in Sandu's papers. The very simple proof of Theorem 3 is presented in [35, Lemmas 12, 13]. The form of Theorem 3 was borrowed from this paper. In [38] the proof is less computing as it uses the one-to-one connection between invertible elements and quasiregular elements in alternative algebras [69].

$14e_4$). Example 1 uses a deformed variant of the known procedure: externally associated of unit to the given algebra [69, pag. 29]. A 2-nilpotent Moufang loop with exponent 3 is stated, essentially using Theorem 3. In Examples 2, 3 a Moufang loops of varieties $\mathcal{K}_{2,2,2^2}$, $\mathcal{K}_{2,2,0}$, a non-commutative and non-associative Moufang loop of variety $\mathcal{K}_{2,0,0}$ are stated. They will not be analyzed in details, as according to item $14c_{14}$) these examples do not have any importance for the main results of the given work, Theorems 1, 2.

$14f$). From the above-stated follows that all results of [66], [67] are false. These works are plagiated. In particular, the main notions defined and used in the paper do not belong to author V. Ursu, as follows from papers [66], [67]: they are copied from the works of other authors, without any references.

15a). The work [68] begins with the following citations 15a_1), 15a_2).

15a_1). In [50] is shown that if the periodic part P of a finitely generated commutative ML L has exponent 3^k, then the Frattini subloop if $\phi(L) = L'P^3$, where $P^3 =< x^3|x \in P >$. We will prove that a similar statement is also true for NML.

15a_2). **Lemma 1.** *If the periodic part P of the finitely generated NML L has exponent p^k, then the Frattini subloop is $\phi(L) = L'P^p$,*

15a_3). The assertion from item 15a_1), in such a form is not contained in [50]. A similar statement is presented.

15a_4). LEMMA 5. *If all elements of commutative Moufang loop L have infinite order or order* 3*, then $H' = \Phi(H)$ for every non-cyclic finite generated subloop $H \subseteq L$. In particular, if L is a free commutative Moufang loop with n generators, then $L' = \Phi(L)$.*

15a_5). According to relation $L^3L' = \Phi(L)$ from item 8c_3) it follows that the Lemma 5 in [50] (item 15a_4)) and the Lemma 1 from item 15a_2) are false.

15a_6). Lemma 2 is not proved, as its proof uses essentially the unproved identities (4) – (10), mentioned in item 14b_9).

15b). Lemma 4 is a particular case for Moufang loops of Theorem 3 in [11] for algebras. The proof of Theorem 3 for groups is contained in Budkin's paper [5], [10]. The proof of Lemma 4 literally coincides with proof of Theorem 3 for algebras (or Budkin's proof), only the homomorphisms, the congruences of algebras are described by normal subloops for loops. [68] does not contain any references to [11] and Budkin's papers. The author V. Ursu did this to assume to himself another person's result, the proof of Lemma 4.

15c). Lemma 3 is plagiated, as well as Lemma 4. Lemma 3 and its proof literally coincides with the result for groups. The only difference: the expression "nilpotent group" was replaced by expression "nilpotent Moufang loop"; to reasonings for commutators in groups the identical reasonings are added for associators in Moufang loops.

15d). Theorem 1 is the main result of [68]. Let us cite items 15d_1) – 15d_4).

15d_1). **Theorem 1.** *If a Moufang loop L contains a nilpotent subloop H that is either non-commutative or non-associative, and all abelian groups* *from L have ranks bounded by the same number r, then all quasiidentities that are true in L do not have a basis of quasiidentities in a finite number of variables.*

$15d_2$). PROOF. By hypothesis, the Moufang loop L contains a non-commutative or non-associative subloop H. By Theorem 1 or 2 (from [67]), in the set $\mathcal{B}$ there exists a variety $\mathfrak{N}$ such that all $\mathfrak{N}$-free loops are contained in the quasivariety $q(H)$.

$15d_3$). Let t be a natural number, $t > 1$, $m = t(t^2 - 1)/6$ and chose a natural number n so that $n > 10m + 1$.

$15d_4$). **Corollary 2.** *The quasivariety which is generated by any finitely generated non-abelian nilpotent Moufang loop L does not have a finite basis of quasiidentities in a finite number of variables.*

$15d_5$). Theorem 1 and its proof are written in the same manner as Lemma 3, see item $15c$). Theorem 1 is false and its proof is erroneous, together they make an unsuccessful plagiarism. Naturally, its source is not mentioned. This confirms the statements from this item.

$15d_6$). Item $15d_2$) uses the false Theorem 1 or 2, which by item $14c_9$) are false.

$15d_7$). The proof of Theorem 1 uses Lemma 1, which by item $15a_5$) is false.

$15d_8$). The Theorem 1 and its proof are a mechanical replication of the corresponding results for groups. Item $15d_3$) is necessary for this transfer.

$15d_9$). The proof of Theorem 1 literally coincides with the proof for groups. The only distinction between these proofs is the following: the expression "nilpotent group" was replaced by expression "nilpotent Moufang loop"; the expression "commutant" was replaced by expression "associant-commutant". Dear author, for the sake of decency it was necessary to change "commutator $[x, y]$" for "associator $[x, y, z]$".

$15d_{10}$). From items $15d_5$) – $15d_8$), $15d_{10}$) it follows that Theorem 1 from item $15d_1$) is false, its proof is a senseless replication of the group's result on Moufang loops.

$15d_{11}$). Corollary 2 from item $15d_4$) confirms the procedure of mechanical replication. The expression "abelian group" was carelessly transferred on expression "abelian Moufang loop".

$15e$)). Theorem 1 and Corollaries 2 – 4 are false, as a consequence of Theorem 1.

$15f$)). From the above-stated it follows that almost all results of work [68] are false, others are plagiated. The work [68] ia a direct continuation of [66], [67].

15g). From items 14f) and 15f)) it follows that the works [66] – [68] do not even represent any mathematical interest, they are anti-scientific.

16a). Finally, we shall consider the work [63], which has a different subject than the other analyzed works. We cite items 16a_1) – 16a_5).

16a_1). Let A_i, $i \in I$, be a set of algebraic systems of arbitrary signatures σ_i, $i \in I$. We complete the signature of every system A_i with the functional symbols p_j, $j \in I$, that correspond to the operations of projections $p_j^{A_i}$, $j \in I$, defined on the Cartesian power A_i^I with values from $A_i : p_j^{A_i}(a) = a_j$, $j \in I$, for any element $a = (a_i, i \in I) \in A_i^I$. If not all systems from this set are algebraic, then we also complete the signature of every system A_i with the predicative symbol e that corresponds to the real identical predicate e^{A_i}, defined on the Cartesian power A_i^I with real values: $A_i| = e^{A_i}(a)$ ($e_i^A(a)$ holds in A_i) for any $a = (a_i, i \in I) \in A_i^I$. The system we obtain in such a way will be called an *enriched algebraic system* and will be also denoted by A_i.

The enriched Cartesian product of the enriched algebraic systems $A_i, i \in I$, is an algebraic system $\otimes_i A_i$ with the basic set $A = \prod_{i \in I} A_i$, which for each family of basic n-operations $(f^{A_i}, i \in I)$ and each family of basic m-predicates $(r_i^{A_i}, i \in I)$ of the enriched systems $A_i, i \in I$, has a basic n-operation f^A and a basic m-predicate, defined by

$$f^A(a_1, \ldots, a_m) = (f_i^{A_i}(a_1(i), \ldots, a_n(i)), i \in I),$$

$$A| = r^A(a_1, \ldots, a_m) \Leftrightarrow \vee_{i \in I} A_i| + r_i^{A_i}(a_1(i), idots, a_m(i)),$$

where $a_1, a_2, \ldots.$ are elements from A and it doesn't have any other basic operations and predicates.

16a_2). Let now $Q_i, i \in I$ be a set of classes of algebraic systems. The signatures of these classes may be different. We will define the product of classes $Q_i, i \in I$, as the class of algebraic systems, consisting of all isomorphisms of algebraic systems of the form $\otimes_i A_i$, where $A_i \in Q_i, i \in I$.

16a_3). **Lemma 1.** *The product of a finite number of filteredly closed classes is a filteredly closed class.*

16a_4). **Lemma 2.** *The product of a finite number of hereditary classes is a hereditary class.*

16a_5). **Theorem 4.** *If the classes of algebraic systems $K_1, \ldots, K_n$ are quasi-varieties, then the product $K_1 \otimes \ldots \otimes K_n$ is a quasi-variety.*

16a_6). The role and importance of the introduced notions of functional symbols $p_j, j \in I$ and identical predicate e^{A_I} in definition of enriched algebraic system A_i from item 16a_1) is not clear. Trivial is the fact that these notions do not influence in any way the structure of algebraic system A_i. Also trivial are these notions for definitions of enriched Cartesian product.

$16a_7$). According to item $16a_2$) the signatures of classes $Q_i, i \in I$ may be different. In such a case Theorem 4 from item $16a_5$) is a nonsense. Even from this follows that every quasivariety is characterized by a set of quasiidentities and that a quasivariety in product of algebraic systems is true iff it is true in ever factor.

$16a_8$). The proof of Theorem 4 from item $16a_5$) uses essentially Lemmas 1 and 2 from items $16a_3$) and $16a_4$). It is even useless to comment the proofs of these lemmas. Actually, the correct statements for Lemmas 1,2 are [33, Theorem IV.8.2] and [33, Corollary IV.8.4] respectively.

$16a_9$). This obvious example contradicts Theorem 4 (also Theorem 3, 5). According to item $16a_2$) let the classes of quasivarieties (universal classes, varieties) $K_1, K_2, \ldots, K_n$ consist of algebras of arities $1, 2, n$ respectively. By Theorem 4 (or Theorem 3 or Theorem 5) the product $K_1 \otimes K_2 \otimes \ldots \otimes K_n$ is a quasi-variety. Question: what arity has this quasi-variety?

16*b*). It is useless to comment the statement for varieties. They are a nonsense. The correct statements are contained in [33], whence the author of [63] has copied them according to his level of understanding.

16*c*). Also it is useless and unpleasant to characterize paper [63]. It is straightforward.

Now we present the scheme of conformity of the above-stated items to the papers from the List of References:

1*a*) – 1*o*) → [56]; 2*a*) – 2*o*) → [16]; 3*a*) – 3*i*) → [62]; 4*a*) – $4c_1$) → [13]; 5*a*) – 5*h*) → [61]; 6*a*) → [60]; 7*a*) – 7*d*) → [53]; 8*a*) – 8*j*) → [54], [55], [58], [59]; 9*a*) – $9h_8$) → [58], [59]; 10*a*) – 10*d*) → [59]; 11*a*) – 11*n*) → [64]; 12*a*) → [**?**], [64]; 13*a*) → [66], [67]; 14*a*) – 14*f*) → [66], [67]; 15*a*) – 15*g*) → [68], [50], [66], [67]; 16*a*) – 16*b*) → [63]; Conclusions → [49] – [57], [17].

5 Conclusions

From the above-stated it follows that all of the analyzed works of V. Ursu and A. Covalschi consist only of gross mistakes, in the best case they consist of plagiarism: erroneous mechanical replication of the results for nilpotent groups on centrally nilpotent Moufang loops or *A*-loops. These works are not scientific. In more detail.

a). Have no elementary skills of logic thinking, committing gross mistakes of computing nature in the proofs.

b). Assumed to himself, changing the terminology, (naturally V. Ursu) various specific features (belonging N. Sandu) of notion of centrally nilpotent Moufang loops or A-loops. From their works it follows that they have not understood the meaning of the constructive descriptions of notion of centrally nilpotent loop. This notion was introduced by R. Bruck.

c). The basic idea is that all of the analyzed works is a transfer of the results for identities of commutative Moufang loops, separable algebras, for quasivarieties of nilpotent groups on more general algebraical structures. This mechanical replication of results led sometimes to senseless statements. Even worse is the plagiarism of Mal'cev's results.

The above analysis includes all published works of V. Ursu, except for [49], [57], see [17]. The work [57] considerably differs from all works of V. Ursu. This paper is written by skilled expert, based on mathematical logics. The works [13], [61], [62], [16] make the dissertation of A. Covalschi (Kishinev, 2013), the works [49] – [57] make the dissertation of V. Ursu (Novosibirsk, 2000). From the analyzed works it follows that all results of Covalschi's dissertations are erroneous. The same is true for the results from the dissertations belonging to V. Ursu.

At last, naturally there is a question: how could it happen that the analyzed works were published in rather prestigious Scientific journals?

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